

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 08.11.93  
Test oil : ISO 4113  
  
Combination No. : 0 402 646 954X  
  
Injection pump  
Pump designation : PE6P120A320LS7834  
                          : -10  
EP type number : 0 412 626 853  
  
Governor  
Governor design. : RQ300/1050PA993-5  
Governor no. : 0 421 801 610

Cust. part No. : 0210740502

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Customer spec. information  
Customer : MB-NFZ  
Motor : OM401 LA  
Power kW : 213.0

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## TEST BENCH REQUIREMENTS

Inlet line : 3.1  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 1 417 413 025  
  
Inlet press. bar : 1.5  
Tolerance bar : ± 0.1  
  
Overflow quantity  
min. l/h : 110  
Tolerance l/h : ± 10.0  
  
Test nozzle holde  
assembly : 1 688 901 105  
  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

A01

Test Lines : 1 680 750 075  
  
Outside diameter : 8.0  
  
x inside diameter : 3.0  
x Length mm : 1000

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## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

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## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 5.55  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
  
Rack travel in mm : 20.50  
Tolerance mm : ± 0.50  
  
Firing order : 6- 3- 5- 2- 4-  
                  : 1  
  
Phasing : 0-60-120-180-240  
          : -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75  
  
Start of delivery mark  
  
Barrel no. : 6

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## BASIC SETTING

Rated speed rpm : 1050  
  
Rack travel in mm : 14.10  
Tolerance mm : ± 0.05

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Del. quantity  
cm<sup>3</sup>/1000 strokes : 217.5

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Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

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Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

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Speed

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Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

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Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

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Rated speed rpm : 300

Rack travel in mm : 6.20  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever  
position degree : 109  
Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm : ± 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
Aneroid pressure  
hPa : 1500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 217.5

A02

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
position degree : 97.0  
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 13.10  
Rated speed rpm : 1098  
Tolerance 1/min : ± 8

rack travel mm : 4.00  
Rated speed rpm : 1190  
Tolerance 1/min : ± 15

rack travel mm : 0.75  
Tolerance mm : ± 0.75  
Rated speed rpm : 1300

LOW IDLE

control lever  
position degree : 72.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 200  
CRT mm min. : > 7.50

Testing:

Rated speed rpm : 300  
rack travel mm : 6.20  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 400  
Tolerance 1/min : ± 20

TORQUE CONTROL

Rated speed rpm : 1050

rack travel mm : 14.10  
 Tolerance mm : ± 0.05  
  
 Rated speed rpm : 800  
 rack travel mm : 14.10  
 Tolerance mm : ± 0.05  
  
 Rated speed rpm : 600  
 rack travel mm : 14.10  
 Tolerance mm : ± 0.05

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ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 400  
 Pressure hPa : 1500  
 rack travel mm : 14.10  
 Tolerance mm : ± 0.05  
  
 Rated speed rpm : 400  
 Pressure hPa : -  
 rack travel mm : 9.45  
 Tolerance mm : ± 0.15

MEASUREMENT

Pressure hPa : -  
 Rated speed rpm : 500  
 rack travel mm : 9.45  
 Tolerance mm : ± 0.15  
  
 Rated speed rpm : 400  
  
 Pressure hPa : 350  
 Tolerance mm : ± 0.05  
  
 Pressure hPa : 550  
 rack travel mm : 13.30  
 Tolerance mm : ± 0.10

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Start interlock

Rated speed rpm : > 100  
 Rated speed rpm : < 220  
  
 Check  
 speed 1/min : > 80  
 Check  
 speed 1/min : < 240

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FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
 hPa : 1500  
 Rated speed rpm : 800  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 218.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 5.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

---

rack travel mm : 14.10  
 Tolerance mm : ± 0.05

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Aneroid pressure  
 hPa : 350  
 Rated speed rpm : 400  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 150.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 1.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 4.5

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Aneroid pressure  
 hPa : -  
 Rated speed rpm : 500  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 130.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 4.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

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STARTING FUEL DELIVERY

Rated speed rpm : 100  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 220.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 10.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 14.0

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LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 6.20  
Tolerance mm :  $\pm$  0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

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End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 04.11.93  
Test oil : ISO 4113  
  
Combination No. : 0 402 646 957X  
  
Injection pump  
Pump designation : PE6P120A320LS7836  
: -10  
EP type number : 0 412 626 854  
  
Governor  
Governor design. : RQV300...1050PA797  
: -32  
Governor no. : 0 421 813 957  
  
Cust. part No. : 0200741002

Customer spec. information

Customer : MB-NFZ  
Motor : OM401 LA  
Power KW : 180.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 1 417 413 025  
  
Inlet press. bar : 1.5  
Tolerance bar : ± 0.1  
  
Overflow quantity  
min. l/h : 110  
Tolerance l/h : ± 10.0  
  
Test nozzle holder  
assembly : 1 688 901 105  
  
Opening pressure  
bar : 208.5

A05

Tolerance bar : ± 1.5  
  
Test lines : 1 680 750 075  
  
Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 5.55  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
  
Rack travel in mm : 20.50  
Tolerance mm : ± 0.50  
  
Firing order : 6-3-5-2-4-  
: 1  
  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75  
  
Start of delivery mark  
  
Barrel no. : 6

BASIC SETTING

Rated speed rpm : 1050  
  
Rack travel in mm : 12.70  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 183.5

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.60  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1100

Rack travel in mm : 15.50  
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
Aneroid pressure  
hPa : 1400

Del. quantity  
cm<sup>3</sup>/1000 strokes : 183.5

A06

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
position degree : 120.0  
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.70  
Rated speed rpm : 1095

Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1180

Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50

Rated speed rpm : 1300

LOW IDLE

control lever  
position degree : 82.0  
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 7.40

Testing:

Rated speed rpm : 300  
rack travel mm : 5.60

Tolerance mm : + 0.10

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 12.70

Tolerance mm : + 0.05

Rated speed rpm : 800  
rack travel mm : 12.70  
Tolerance mm : ± 0.05

Rated speed rpm : 600  
rack travel mm : 12.70  
Tolerance mm : ± 0.05

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ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 400  
Pressure hPa : 1400  
rack travel mm : 12.70  
Tolerance mm : ± 0.05

Rated speed rpm : 400  
Pressure hPa : -  
rack travel mm : 10.75  
Tolerance mm : ± 0.15

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 10.75  
Tolerance mm : ± 0.15

Rated speed rpm : 400

Pressure hPa : 200  
Tolerance mm : ± 0.05

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Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 220

Check speed 1/min : > 80  
Check speed 1/min : < 240

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FUEL DELIVERY CHARACTERISTICS

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Aneroid pressure  
hPa : 1400  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 188.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

A07

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

rack travel mm : 12.70  
Tolerance mm : ± 0.05

---

Aneroid pressure  
hPa : 200  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 119.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

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Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 133.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 210.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 14.0

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LOW IDLE

Rated speed rpm : 300  
Rack travel in mm : 5.60  
Tolerance mm : ± 0.10

vel. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

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End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 05.11.93  
Test oil : ISO 4113

Combination No. : 0 402 646 958X

Injection pump  
Pump designation : PE6P120A320LS7836  
: -10  
EP type number : 0 412 626 854

Governor  
Governor design. : RQV300...950PA797  
: -33  
Governor no. : 0 421 813 958

Cust. part No. : 0200742102

Customer-spec. information

Customer : MB-NFZ  
Motor : OM401 LA  
Power KW : 180.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 110  
Tolerance l/h : ± 10.0

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5

A09

Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.55  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 950

Rack travel in mm : 12.70  
Tolerance mm : ± 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 188.5

---

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

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Check tolerance  
cm<sup>3</sup>/1000s. : + 4.0

---

Speed

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Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000s. : 9.0

---

Rated speed rpm : 300

Rack travel in mm : 5.60  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000s. : + 6.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000s. : 10.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

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GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1020

Rack travel in mm : 16.50  
Tolerance mm : + 1.30

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 950  
Aneroid pressure  
hPa : 1400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 188.5

A10

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 9.0

---

CONTROL LEVER

control lever  
position degree : 118.0  
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.70  
Rated speed rpm : 995  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1080  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1200

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LOW IDLE

control lever  
position degree : 82.0  
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 7.40

Testing:

Rated speed rpm : 300  
rack travel mm : 5.60  
Tolerance mm : + 0.10

Rated speed rpm : 375

---

TORQUE CONTROL

Rated speed rpm : 950  
rack travel mm : 12.70  
Tolerance mm : + 0.05

Rated speed rpm : 800  
rack travel mm : 12.70  
Tolerance mm : ± 0.05

Rated speed rpm : 600  
rack travel mm : 12.70  
Tolerance mm : ± 0.05

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#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 400  
Pressure hPa : 1400  
rack travel mm : 12.70  
Tolerance mm : ± 0.05

Rated speed rpm : 400  
Pressure hPa : -  
rack travel mm : 10.75  
Tolerance mm : ± 0.15

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 10.75  
Tolerance mm : ± 0.15

Rated speed rpm : 400

Pressure hPa : 200  
Tolerance mm : ± 0.05

---

##### Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 220

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 240

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#### FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1400  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 188.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

rack travel mm : 12.70  
Tolerance mm : ± 0.05

---

Aneroid pressure  
hPa : 200  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 119.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 133.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

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#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 210.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 14.0

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#### LOW IDLE

Rated speed rpm : 300  
Rack travel in mm : 5.60  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

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End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 03.03.94  
Test oil : ISO 4113  
Combination No. : 0 402 646 984  
Injection pump  
Pump designation : PE6P120A320RS7248  
: -10  
EP type number : 0 412 626 900

Governor  
Governor design. : RQ275/1150PA987  
Governor no. : 0 421 801 578

Cust. part No. : 1248030

Customer-spec. information  
Customer : DAF  
Motor : RS 222 L  
Power KW : 222.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 417 413 025  
Inlet press. bar : 1.5  
Tolerance bar : ± 0.1  
Test nozzle holder  
assembly : 1 688 901 105  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test Lines : 1 680 750 089

Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Prestroke mm : 5.25  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Rack travel in mm : 12.50  
Tolerance mm : ± 0.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1000  
Rack travel in mm : 12.25  
Tolerance mm : ± 0.05  
Rack travel in mm : 4.70  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0

Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 6.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1211  
 guide sleeve  
 travel mm : 6.48  
 Tolerance mm : ± 0.10

Rated speed rpm : 275  
 guide sleeve  
 travel mm : 1.78  
 Tolerance mm : ± 0.10

Rated speed rpm : 1150  
 guide sleeve  
 travel mm : 6.00  
 Tolerance mm : ± 0.10

Rated speed rpm : 350  
 guide sleeve  
 travel mm : 4.05  
 Tolerance mm : ± 0.10

Rated speed rpm : 450  
 guide sleeve  
 travel mm : 6.00  
 Tolerance mm : ± 0.10

Rated speed rpm : 1370  
 guide sleeve  
 travel mm : 11.50  
 Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 550

Rack travel in mm : 15.80  
 Tolerance mm : ± 0.60

CONTROL LEVER

control lever  
 position degree : 104.0  
 tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.20  
 Rated speed rpm : 1208  
 Tolerance 1/min : ± 8

rack travel mm : 4.00  
 Rated speed rpm : 1290  
 Tolerance 1/min : ± 15

rack travel mm : 0.70  
 Tolerance mm : ± 0.70  
 Rated speed rpm : 1450

LOW IDLE

control lever  
 position degree : 74.0  
 tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 175  
 CRT mm min. : > 7.00

Testing:

Rated speed rpm : 275  
 rack travel mm : 4.70  
 Tolerance mm : ± 0.10

rack travel mm : 2.00  
 Rated speed rpm : 340  
 Tolerance 1/min : ± 20

TORQUE CONTROL

Rated speed rpm : 1000  
 rack travel mm : 12.25  
 Tolerance mm : ± 0.05

Rated speed rpm : 1150  
 rack travel mm : 12.25  
 Tolerance mm : ± 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 600  
Pressure hPa : 1000  
rack travel mm : 12.25  
Tolerance mm : + 0.05

Rated speed rpm : 600  
Pressure hPa : -  
rack travel mm : 9.40  
Tolerance mm : + 0.10

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 600  
rack travel mm : 9.40  
Tolerance mm : + 0.10

Rated speed rpm : 600

Pressure hPa : 240  
rack travel mm : 10.40  
Tolerance mm : + 0.10

Pressure hPa : 420  
rack travel mm : 11.65  
Tolerance mm : + 0.05

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 122.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

LOW IDLE

Rack travel in mm : 4.70  
Tolerance mm : + 0.10

A15

Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 04.07.94  
Test oil : ISO 4113  
Combination No. : 0 402 646 995  
Injection pump  
Pump designation : PE6P120A720RS7188  
: -10  
EP type number : 0 412 626 924  
Governor  
Governor design. : RQV200...950PA725  
: -10  
Governor no. : 0 421 814 002  
Cust. part No. : 1338075

Customer-spec. information  
Customer : SCANIA  
Motor : DSC 11 33

TEST BENCH REQUIREMENTS

Inlet Line : 4.2  
Vibration damper  
(RoBo diaphragm) : 3.1  
Test oil inlet temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 417 413 025  
Inlet press. bar : 2.5  
Tolerance bar : ± 0.1  
Test nozzle holder assembly : 1 688 901 104  
Opening pressure bar : 251.5  
Tolerance bar : ± 1.5

A16

Test lines : 1 680 750 008  
Outside diameter : 6.0  
x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Prestroke mm : 4.45  
Tolerance mm : ± 0.05  
Check tolerance mm : ± 0.10  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check tolerance °NW : ± 0.75  
Start of delivery mark  
Tolerance : ± 0.30  
Check tolerance °NW : ± 0.75  
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 250



Rack travel in mm : 4.70  
 Tolerance mm : ± 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 16.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 6.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 8.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1045  
 guide sleeve  
 travel mm : 8.50  
 Tolerance mm : ± 0.10

Rated speed rpm : 225  
 guide sleeve  
 travel mm : 1.40  
 Tolerance mm : ± 0.20

Rated speed rpm : 650  
 guide sleeve  
 travel mm : 4.80  
 Tolerance mm : ± 0.30

Rated speed rpm : 350  
 guide sleeve  
 travel mm : 2.70  
 Tolerance mm : ± 0.30

Rated speed rpm : 1125  
 guide sleeve  
 travel mm : 9.50  
 Tolerance mm : ± 0.20

GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1140

Rack travel in mm : 9.50  
 Tolerance mm : ± 2.50

CONTROL LEVER

control lever  
 position degree : 60.0  
 tolerance degree : ± 4.0

control lever  
 position degree : 114.0  
 tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 12.40  
 Rated speed rpm : 995  
 Tolerance 1/min : ± 5  
 Check  
 speed 1/min : ± 10

rack travel mm : 4.00  
 Rated speed rpm : 1125  
 Tolerance 1/min : ± 15  
 Check  
 speed 1/min : ± 20

rack travel mm : 0.50  
 Tolerance mm : ± 0.50  
 Rated speed rpm : 1250

LOW IDLE

control lever  
 position degree : 64.0  
 tolerance degree : ± 4.0

control lever  
 position degree : 10.0  
 tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 150

CRT mm min. : > 6.00

Testing:

Rated speed rpm : 250  
 rack travel mm : 4.70  
 Tolerance mm : ± 0.10

Rated speed rpm : 300  
 Tolerance 1/min : ± 99

TORQUE CONTROL

Rated speed rpm : 950  
rack travel mm : 13.45  
Tolerance mm :  $\pm$  0.05

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 13.45  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 10.40  
Tolerance mm :  $\pm$  0.20

MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 270  
rack travel mm : 11.00  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 440  
rack travel mm : 12.05  
Tolerance mm :  $\pm$  0.05

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 222.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  4.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 153.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.40  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 165.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  24.0

---

LOW IDLE

Rated speed rpm : 250  
Rack travel in mm : 4.70  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 09.04.96  
Test oil : ISO 4113  
Combination No. : 0 402 648 797  
Injection pump  
Pump designation : PE8P120A320LS7873  
EP type number : 0 412 628 880  
Governor  
Governor design. : RQ750PA1231  
Governor no. : 0 421 801 791  
Cust. part No. : 04222112KY0165-17

Customer-spec. information  
Customer : KHD  
Motor : BF8M1015/C  
Power KW : 318.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2  
Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0  
Overflow valve : 1 417 413 025  
Inlet press. bar : 1.5  
Tolerance bar : + 0.1  
Test nozzle holder  
assembly : 1 688 901 105  
Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5  
Test lines : 1 680 750 075  
Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0  
Prestroke mm : 4.05  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10  
Rack travel in mm : 10.50  
Tolerance mm : + 1.50  
Firing order : 1- 8- 7- 2- 6  
                  : - 5- 4- 3  
Phasing : 0-45-90-135-180  
          : -225-270-315  
Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75  
Start of delivery mark  
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700  
Rack travel in mm : 13.30  
Tolerance mm : + 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 365.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0  


---

 Spread  


---

 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  


---

 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0  


---

  
 Rated speed rpm : 300  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 20.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 6.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 768  
 guide sleeve  
 travel mm : 6.28  
 Tolerance mm : + 0.15  
  
 Rated speed rpm : 610  
 guide sleeve  
 travel mm : 0.52  
 Tolerance mm : + 0.25  
  
 Rated speed rpm : 900  
 guide sleeve  
 travel mm : 14.60  
 Tolerance mm : + 0.15  
  
 Rated speed rpm : 866  
 guide sleeve  
 travel mm : 12.00  
 Tolerance mm : + 0.25  
  
 Rated speed rpm : 930  
 guide sleeve  
 travel mm : 13.50  
 Tolerance mm : + 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

A20

Rated speed rpm : 700  
 Aneroid pressure  
 hPa : -  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 365.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
 position degree : 109.0  
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 0.50  
 Tolerance mm : + 0.50  
 Rated speed rpm : 900

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 750  
 rack travel mm : 12.30  
  
 Rated speed rpm : 780  
 Tolerance 1/min : + 4  
 rack travel mm : 5.50  
  
 rack travel mm : 0.50  
 Tolerance mm : + 0.50  
 Rated speed rpm : 900  
  
 Rated speed rpm : 751  
 rack travel mm : 12.30  
  
 Rated speed rpm : 781  
 Tolerance 1/min : + 4  
 rack travel mm : 5.50  
  
 rack travel mm : 0.50  
 Tolerance mm : + 0.50  
 Rated speed rpm : 900  
  
 Rated speed rpm : 752  
 rack travel mm : 12.30  
  
 Rated speed rpm : 782

Tolerance 1/min : + 4  
rack travel mm : 5.50

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 900

Rated speed rpm : 753  
rack travel mm : 12.30

Rated speed rpm : 783  
Tolerance 1/min : + 4  
rack travel mm : 5.50

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 900

Rated speed rpm : 754  
rack travel mm : 12.30

Rated speed rpm : 784  
Tolerance 1/min : + 4  
rack travel mm : 5.50

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 900

Rated speed rpm : 755  
rack travel mm : 12.30

Rated speed rpm : 785  
Tolerance 1/min : + 4  
rack travel mm : 5.50

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 900

---

TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 13.30  
Tolerance mm : + 0.05

---

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 560

Check  
speed 1/min : > 80

Check  
speed 1/min : < 580

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm : + 0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 205.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 24.0

---

LOW IDLE

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 17.12.93  
Test oil : ISO 4113

Combination No. : 0 402 648 893X

Injection pump  
Pump designation : PE8P120A320LS7835  
: -10

EP type number : 0 412 628 853

Governor  
Governor design. : RQ300/950PA971-2  
Governor no. : 0 421 801 548

Cust. part No. : 0200740602

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM402 LA  
Power KW : 280.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 110  
Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

A22

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.55  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1

Phasing : 0-45-90-135-180  
: -225-270-315  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 14.70  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 231.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

Spread

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 300

Rack travel in mm : 6.20  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1014  
guide sleeve  
travel mm : 6.87  
Tolerance mm : ± 0.10

Rated speed rpm : 300  
guide sleeve  
travel mm : 2.13  
Tolerance mm : ± 0.10

Rated speed rpm : 950  
guide sleeve  
travel mm : 6.55  
Tolerance mm : ± 0.10

Rated speed rpm : 750  
guide sleeve  
travel mm : 6.14

Tolerance mm : ± 0.10

Rated speed rpm : 404  
guide sleeve  
travel mm : 4.60  
Tolerance mm : ± 0.10

Rated speed rpm : 500  
guide sleeve  
travel mm : 6.00  
Tolerance mm : ± 0.10

Rated speed rpm : 1160  
guide sleeve  
travel mm : 11.50  
Tolerance mm : ± 0.50

Rated speed rpm : 853  
guide sleeve  
travel mm : 6.41  
Tolerance mm : ± 0.10

GUIDE SLEEVE POSITION

control lever  
position degree : 109  
Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm : ± 0.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750  
Aneroid pressure  
hPa : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 231.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
position degree : 98.0  
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 13.10  
Rated speed rpm : 998  
Tolerance 1/min : + 8

rack travel mm : 4.00  
Rated speed rpm : 1085  
Tolerance 1/min : + 15

rack travel mm : 0.70  
Tolerance mm : + 0.70  
Rated speed rpm : 1200

---

#### LOW IDLE

control lever  
position degree : 74.0  
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 7.50

#### Testing:

Rated speed rpm : 300  
rack travel mm : 6.20  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 400  
Tolerance 1/min : + 20

---

#### TORQUE CONTROL

Dimension a mm : 0.50  
Rated speed rpm : 750  
rack travel mm : 14.70  
Tolerance mm : + 0.05

Rated speed rpm : 950  
rack travel mm : 14.10  
Tolerance mm : + 0.10

Rated speed rpm : 800  
rack travel mm : 14.70  
Tolerance mm : + 0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

A24

Rated speed rpm : 400  
Pressure hPa : 1200  
rack travel mm : 14.70  
Tolerance mm : + 0.05

Rated speed rpm : 400  
Pressure hPa : -  
rack travel mm : 10.45  
Tolerance mm : + 0.15

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 10.45  
Tolerance mm : + 0.15

Rated speed rpm : 400

Pressure hPa : 250  
rack travel mm : 11.05  
Tolerance mm : + 0.10

Pressure hPa : 550  
Tolerance mm : + 0.05

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 217.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

rack travel mm : 14.70  
Tolerance mm : + 0.10

---

Aneroid pressure  
hPa : 550  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 190.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.5



Check tolerance  
cm<sup>3</sup>/1000s. : ± 4.5

---

Aneroid pressure

hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 55.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 15.0  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 19.0

---

LOW IDLE

Rated speed rpm : 300  
Rack travel in mm : 6.20  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 10.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 06.09.93  
Test oil : ISO 4113  
Combination No. : 0 402 648 911  
Injection pump  
Pump designation : PE8P120A320LS7839  
: -10  
EP type number : 0 412 628 855  
Governor  
Governor design. : RQV300...1050PA797  
: -27  
Governor no. : 0 421 813 916  
Cust. part No. : 0200749302

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM442 LA  
Power kW : 370.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 417 413 025  
Inlet press. bar : 1.5  
Tolerance bar : ± 0.1  
Overflow quantity  
min. L/h : 110  
Tolerance L/h : ± 10.0  
Test nozzle holde  
assembly : 1 688 901 105  
Opening pressure  
bar : 208.5

A26

Tolerance bar : ± 1.5  
Test lines : 1 680 750 075  
Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Prestroke mm : 5.05  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Rack travel in mm : 20.50  
Tolerance mm : ± 0.50  
Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1  
Phasing : 0-45-90-135-180  
: -225-270-315  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75  
Start of delivery mark  
Barrel no. : 8

CRT ZERO POSITION

Rack travel in mm : 15.20  
Tolerance mm : ± 0.10

---

BASIC SETTING

Del. quantity  
cm<sup>3</sup>/1000 strokes : 266.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 6.30  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1130

Rack travel in mm : 16.50  
Tolerance mm : ± 1.30

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550

Aneroid pressure  
hPa : 900  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 266.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

CONTROL LEVER

control lever  
position degree : 122.0  
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 15.30  
Rated speed rpm : 1095  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1190  
Tolerance 1/min : ± 15

rack travel mm : 0.75  
Tolerance mm : ± 0.75  
Rated speed rpm : 1250

---

LOW IDLE

control lever  
position degree : 80.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 200  
CRT mm min. : > 6.80

Testing:

Rated speed rpm : 300  
rack travel mm : 6.30  
Tolerance mm : ± 0.10

Rated speed rpm : 375

---

**TORQUE CONTROL**

Rated speed rpm : 1050  
rack travel mm : 16.30  
Tolerance mm : ± 0.10

Rated speed rpm : 800  
rack travel mm : 16.50  
Tolerance mm : ± 0.10

---

**ANEROID/ALTITUDE  
COMPENSATOR TEST****SETTING**

Rated speed rpm : 550  
Pressure hPa : 900

**2-stage LDA setting**

Rated speed rpm : 700  
Pressure hPa : 1100  
rack travel mm : 0.20

**MEASUREMENT**

Rated speed rpm : 550

Pressure hPa : 550  
rack travel mm : -2.25  
Tolerance mm : ± 0.05

Pressure hPa : 1300  
rack travel mm : 0.55  
Tolerance mm : ± 0.05

Pressure hPa : 250  
rack travel mm : -5.00  
Tolerance mm : ± 0.10

---

**Start interlock**

Rated speed rpm : > 100  
Rated speed rpm : < 220

Check speed 1/min : > 80

Check speed 1/min : < 240

---

**FUEL DELIVERY CHARACTERISTICS**

---

Aneroid pressure  
hPa : 2000  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 272.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

Aneroid pressure  
hPa : 2000  
Rated speed rpm : 800  
rack travel mm : 16.50  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 285.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

Aneroid pressure  
hPa : 1300  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 273.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

---

Aneroid pressure  
hPa : 550  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 204.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 133.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 285.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 14.0

---

LOW IDLE

Rated speed rpm : 300  
Rack travel in mm : 6.30  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 06.09.93  
Test oil : ISO 4113  
  
Combination No. : 0 402 648 915X  
  
Injection pump  
Pump designation : PE8P120A320LS7835  
: -10  
EP type number : 0 412 628 853  
  
Governor  
Governor design. : RQ300/1050PA993-1  
Governor no. : 0 421 801 582

Cust. part No. : 0200747202

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM402 LA  
Power KW : 280.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : +- 0.1

Overflow quantity  
min. l/h : 110  
Tolerance l/h : +- 10.0

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : +- 1.5

B02

Test lines : 1 680 750 075  
  
Outside diameter : 8.0  
  
x inside diameter : 3.0  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : +- 1.0

Prestroke mm : 5.55  
Tolerance mm : +- 0.05  
Check  
tolerance mm : +- 0.10

Rack travel in mm : 20.50  
Tolerance mm : +- 0.50

Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1

Phasing : 0-45-90-135-180  
: -225-270-315  
Tolerance : +- 0.30  
Check  
tolerance °NW : +- 0.75

Start of delivery mark

Barrel no. : 8

BASIC SETTING

Del. quantity  
cm<sup>3</sup>/1000 strokes : 231.0

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0

Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0

---

Spread

---

Tolerance  
 cm<sup>3</sup>/1000 strokes : 6.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 300

Rack travel in mm : 6.20  
 Tolerance mm : + 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 19.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 6.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 6.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

GUIDE SLEEVE POSITION

control lever  
 position degree : 109  
 Rated speed rpm : 600

Rack travel in mm : 20.00  
 Tolerance mm : + 0.80

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750  
 Aneroid pressure  
 hPa : 1200  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 231.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

---

CONTROL LEVER

control lever  
 position degree : 99.0  
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 13.00  
 Rated speed rpm : 1098  
 Tolerance 1/min : + 8

rack travel mm : 4.00  
 Rated speed rpm : 1185  
 Tolerance 1/min : + 15

rack travel mm : 0.70  
 Tolerance mm : + 0.70  
 Rated speed rpm : 1300

---

LOW IDLE

control lever  
 position degree : 74.0  
 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 200  
 CRT mm min. : > 7.80

Testing:

Rated speed rpm : 300  
 rack travel mm : 6.20  
 Tolerance mm : + 0.10

rack travel mm : 2.00  
 Rated speed rpm : 400  
 Tolerance 1/min : + 20

---

TORQUE CONTROL

Dimension a mm : 0.50

Rated speed rpm : 1050  
 rack travel mm : 14.00  
 Tolerance mm : + 0.10

Rated speed rpm : 800

rack travel mm : 14.70  
Tolerance mm : ± 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 750  
Pressure hPa : 1200  
rack travel mm : 14.70  
Tolerance mm : ± 0.05

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 10.25  
Tolerance mm : ± 0.15

MEASUREMENT

Rated speed rpm : 750  
Pressure hPa : 250  
rack travel mm : 11.25  
Tolerance mm : ± 0.10

Pressure hPa : 550  
Tolerance mm : ± 0.05

---

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 220

Check speed 1/min : > 80  
Check speed 1/min : < 240

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 215.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

B04

---

rack travel mm : 14.70  
Tolerance mm : ± 0.10

---

Aneroid pressure  
hPa : 550  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 190.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 132.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 215.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 19.0

---

LOW IDLE

Rated speed rpm : 300  
Rack travel in mm : 6.20  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spread



Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 09.09.93  
Test oil : ISO 4113  
  
Combination No. : 0 402 648 918X  
  
Injection pump  
Pump designation : PE8P120A32OLS7838  
: -10  
EP type number : 0 412 628 854  
  
Governor  
Governor design. : RQ300/1050PA993-4  
Governor no. : 0 421 801 602

Cust. part No. : 021074102

Customer-spec. information

Customer : MB-NFZ  
Motor : OM442 LA  
Power KW : 320.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 110  
Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

B06

Test lines : 1 680 750 075  
Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1

Phasing : 0-45-90-135-180  
: -225-270-315  
Tolerance : ± 0.30

Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 8

BASIC SETTING

Del. quantity  
cm<sup>3</sup>/1000 strokes : 238.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000s. : + 4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000s. : 9.0

Rated speed rpm : 300

Rack travel in mm : 6.50  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000s. : + 6.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000s. : 10.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever  
position degree : 109  
Rated speed rpm : 1020

Rack travel in mm : 20.00  
Tolerance mm : + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600  
Aneroid pressure  
hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 238.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000s. : + 4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000s. : 9.0

CONTROL LEVER

control lever  
position degree : 98.0  
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 13.30  
Rated speed rpm : 1098  
Tolerance 1/min : + 8

rack travel mm : 4.00  
Rated speed rpm : 1180  
Tolerance 1/min : + 15

rack travel mm : 0.75  
Tolerance mm : + 0.75  
Rated speed rpm : 1250

LOW IDLE

control lever  
position degree : 74.0  
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 7.80

Testing:

Rated speed rpm : 300  
rack travel mm : 6.50  
Tolerance mm : + 0.10

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 14.30  
Tolerance mm : + 0.10

ANEROID/ALTITUDE  
COMPENSATOR TEST

### SETTING

Rated speed rpm : 600  
Pressure hPa : 1200  
rack travel mm : 14.45  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 9.05  
Tolerance mm :  $\pm$  0.15

### MEASUREMENT

Rated speed rpm : 600  
Pressure hPa : 250  
rack travel mm : 9.90  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 550  
rack travel mm : 12.60  
Tolerance mm :  $\pm$  0.05

### Start interlock

Rated speed rpm :  $>$  100  
Rated speed rpm :  $<$  220

Check speed 1/min :  $>$  80  
Check speed 1/min :  $<$  240

### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 224.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : 550  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 204.5

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 133.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  2.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

### STARTING FUEL DELIVERY

Rated speed rpm : 100

### LOW IDLE

Rated speed rpm : 300  
Rack travel in mm : 6.50  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 11.08.94  
Test oil : ISO 4113

Combination No. : 0 402 648 921

Injection pump  
Pump designation : PE8P120A320LS7839  
: -10  
EP type number : 0 412 628 855

Governor  
Governor design. : RQ300/950PA993-8  
Governor no. : 0 421 801 618

Cust. part No. : 0210748002

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM442 LA  
Power KW : 370.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 110  
Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

B09

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.05  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 8-7-2-6-3  
: -5-4-1

Phasing : 0-45-90-135-180  
: -225-270-315  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 8

CRT ZERO POSITION

Rack travel in mm : 15.20  
Tolerance mm : ± 0.10

---

**BASIC SETTING**

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 266.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

**Spreed**

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 300

Rack travel in mm : 6.30  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

**Spreed**

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

**(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR**

---

**GUIDE SLEEVE POSITION**

control lever  
position degree : 109  
Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm : ± 0.80

---

**FULL LOAD DELIVERY AT FULL LOAD STOP**

Rated speed rpm : 550

B10

Aneroid pressure  
hPa : 900

Del. quantity  
cm<sup>3</sup>/1000 strokes : 266.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

**Spreed**

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

**CONTROL LEVER**

control lever  
position degree : 104.0  
tolerance degree : ± 4.0

**RATED SPEED**

rack travel mm : 15.50  
Rated speed rpm : 998

Tolerance 1/min : ± 8

rack travel mm : 4.00  
Rated speed rpm : 1090

Tolerance 1/min : ± 15

rack travel mm : 0.75  
Tolerance mm : ± 0.75

Rated speed rpm : 1150

---

**LOW IDLE**

control lever  
position degree : 74.0  
tolerance degree : ± 4.0

**Setting point w/out bumper spring**

Rated speed rpm : 200

CRT mm min. : > 7.60

**Testing:**

Rated speed rpm : 300  
rack travel mm : 6.30  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 400

Tolerance 1/min : ± 20

---

**TORQUE CONTROL**

Rated speed rpm : 950  
rack travel mm : 16.50  
Tolerance mm : ± 0.10

---

**ANEROID/ALTITUDE  
COMPENSATOR TEST****SETTING**

Rated speed rpm : 550  
Pressure hPa : 900

**2-stage LDA setting**

Rated speed rpm : 700  
Pressure hPa : 1100  
rack travel mm : 0.20

**MEASUREMENT**

Rated speed rpm : 550  
Pressure hPa : 550  
rack travel mm : -2.25  
Tolerance mm : ± 0.05

Pressure hPa : 1300  
rack travel mm : 0.55  
Tolerance mm : ± 0.05

Pressure hPa : 250  
rack travel mm : -5.00  
Tolerance mm : ± 0.10

---

**Start interlock**

Rated speed rpm : > 100  
Rated speed rpm : < 220

Check speed 1/min : > 80  
Check speed 1/min : < 240

---

**FUEL DELIVERY CHARACTERISTICS**

---

Aneroid pressure  
hPa : 2000  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 282.5

B11

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

Aneroid pressure  
hPa : 1300  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 273.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

---

Aneroid pressure  
hPa : 550  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 204.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 133.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

**STARTING FUEL DELIVERY**

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 270.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 14.0

---

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 6.30  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.11.93  
Test oil : ISO 4113  
Combination No. : 0 402 648 932B

Injection pump  
Pump designation : PE8P120A320LS7849  
EP type number : 0 412 628 864

Governor  
Governor design. : RQV300...1050PA1034  
Governor no. : 0 421 813 993

Cust. part No. : 9274608

Customer-spec. information

Customer : LIEBHERR  
Motor : D 9308 TI  
Power kW : 360.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

B13

x inside diameter : 3.0  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.55  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 8- 7- 2- 6  
                  : - 3- 5- 4

Phasing : 0-45-90-135-180  
          : -225-270-315  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 14.55  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 264.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 24.5

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1118  
guide sleeve  
travel mm : 10.51  
Tolerance mm : +- 0.25

Rated speed rpm : 350  
guide sleeve  
travel mm : 1.94  
Tolerance mm : +- 0.25

Rated speed rpm : 783  
guide sleeve  
travel mm : 6.60  
Tolerance mm : +- 0.25

Rated speed rpm : 356  
guide sleeve  
travel mm : 1.95  
Tolerance mm : +- 0.25

Rated speed rpm : 406  
guide sleeve  
travel mm : 2.67  
Tolerance mm : +- 0.25

Rated speed rpm : 490  
guide sleeve  
travel mm : 3.59  
Tolerance mm : +- 0.25

Rated speed rpm : 1320

guide sleeve  
travel mm : 13.50  
Tolerance mm : +- 0.50

---

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1140

Rack travel in mm : 13.50  
Tolerance mm : +- 1.30

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900  
Aneroid pressure  
hPa : 1500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 264.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

CONTROL LEVER

control lever  
position degree : 107.0  
tolerance degree : +- 4.0

RATED SPEED  
rack travel mm : 13.50  
Rated speed rpm : 945  
Tolerance 1/min : +- 5

rack travel mm : 4.00  
Rated speed rpm : 1085  
Tolerance 1/min : +- 15

rack travel mm : 0.70  
Tolerance mm : +- 0.70  
Rated speed rpm : 1300

---

LOW IDLE

control lever  
position degree : 81.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 300  
CRT mm min. : > 8.50

Testing:

rack travel mm : 2.00  
Rated speed rpm : 460  
Tolerance 1/min : ± 30  
Rated speed rpm : 385

---

TORQUE CONTROL

Rated speed rpm : 900  
rack travel mm : 14.55  
Tolerance mm : ± 0.05  
Rated speed rpm : 500  
rack travel mm : 14.55  
Tolerance mm : ± 0.05

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 550  
Pressure hPa : 1400  
rack travel mm : 14.55  
Tolerance mm : ± 0.05  
Rated speed rpm : 550  
Pressure hPa : -  
rack travel mm : 11.75  
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 550  
Pressure hPa : 710  
rack travel mm : 12.55  
Tolerance mm : ± 0.10  
Pressure hPa : 860  
rack travel mm : 13.75  
Tolerance mm : ± 0.05

---

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 320

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 340

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 550  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 220.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm : ± 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 160.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 14.0

---

LOW IDLE

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 24.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 08.11.93  
Test oil : ISO 4113

Combination No. : 0 402 648 939

Injection pump  
Pump designation : PE8P120A320LS7863-1  
EP type number : 0 412 628 876

Governor  
Governor design. : RQV300...1050PA797  
: -37  
Governor no. : 0 421 814 003

Cust. part No. : 0220743302

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM442 LA  
Power KW : 405.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. L/h : 110  
Tolerance L/h : ± 10.0

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.75  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 8-7-2-6-3  
: -5-4-1

Phasing : 0-45-90-135-180  
: -225-270-315  
Tolerance : ± 0.30  
Check  
tolerance °N# : ± 0.75

Start of delivery mark

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 14.50  
Tolerance mm : ± 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 282.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Spreed

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 300

Rack travel in mm : 5.50  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1130

Rack travel in mm : 13.40  
Tolerance mm : + 1.30

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
Aneroid pressure  
hPa : 1300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 282.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

CONTROL LEVER

control lever  
position degree : 121.0  
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 13.50  
Rated speed rpm : 1098  
Tolerance 1/min : + 8

rack travel mm : 4.00  
Rated speed rpm : 1185  
Tolerance 1/min : + 15

rack travel mm : 0.75  
Tolerance mm : + 0.75  
Rated speed rpm : 1250

---

LOW IDLE

control lever  
position degree : 84.0  
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 200  
CRT mm min. : > 6.80

Testing:

Rated speed rpm : 300  
rack travel mm : 5.50  
Tolerance mm : + 0.10

Rated speed rpm : 400

---

TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 14.50  
Tolerance mm : + 0.05

Rated speed rpm : 600  
rack travel mm : 14.50  
Tolerance mm : ± 0.05

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 400  
Pressure hPa : 1300  
rack travel mm : 14.50  
Tolerance mm : ± 0.05

Rated speed rpm : 400  
Pressure hPa : -  
rack travel mm : 7.85  
Tolerance mm : ± 0.15

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 7.85  
Tolerance mm : ± 0.15

Rated speed rpm : 400

Pressure hPa : 550  
Tolerance mm : ± 0.05

Pressure hPa : 1000  
rack travel mm : 13.55  
Tolerance mm : ± 0.10

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1300  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 296.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

Aneroid pressure  
hPa : 550  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 204.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 132.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 280.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 14.0

---

LOW IDLE

Rated speed rpm : 300  
Rack travel in mm : 5.50  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

End of test specification sheet





BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 10.09.93  
Test oil : ISO 4113  
Combination No. : 0 402 648 956  
Injection pump  
Pump designation : PE8P120A320LS7863  
EP type number : 0 412 628 874  
Governor  
Governor design. : RQV300...1050PA1050  
                  : -1K  
Governor no. : 0 421 815 339  
Cust. part No. : 0240740102

Customer spec. information

Customer : MB-NFZ  
Motor : OM442 LA  
Power kW : 370.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1  
Test oil inlet temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 417 413 025  
Inlet press. bar : 1.5  
Tolerance bar : ± 0.1  
Overflow quantity min. L/h : 105  
Tolerance L/h : ± 10.0  
Test nozzle holder assembly : 1 688 901 105  
Opening pressure bar : 208.5  
Tolerance bar : ± 1.5

B21

Test lines : 1 680 750 075  
Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Prestroke mm : 5.05  
Tolerance mm : ± 0.05  
Check tolerance mm : ± 0.10  
Rack travel in mm : 14.50  
Tolerance mm : ± 0.50  
Firing order : 3- 7- 2- 6- 3  
                  : - 5- 4- 1  
Phasing : 0-45-90-135-180  
          : -225-270-315  
Tolerance : ± 0.30  
Check tolerance °NW : ± 0.75  
Start of delivery mark  
Barrel no. : 8

BASIC SETTING

Rated speed rpm : 1050  
Rack travel in mm : 14.05  
Tolerance mm : ± 0.05

<hr/>	
Del. quantity	
cm <sup>3</sup> /1000 strokes :	258.0
<hr/>	
Tolerance	
cm <sup>3</sup> /1000 strokes :	+ 1.0
<hr/>	
Check tolerance	
cm <sup>3</sup> /1000S.	: + 4.0
<hr/>	
Spread	
<hr/>	
Tolerance	
cm <sup>3</sup> /1000 strokes :	6.0
<hr/>	
Check tolerance	
cm <sup>3</sup> /1000S.	: 9.0
<hr/>	

Rated speed rpm :	300
Rack travel in mm :	5.80
Tolerance mm :	+ 0.10
Del. quantity	
cm <sup>3</sup> /1000 strokes :	19.0
Tolerance	
cm <sup>3</sup> /1000 strokes :	+ 3.0
Check tolerance	
cm <sup>3</sup> /1000S.	: + 6.0
Spread	
Tolerance	
cm <sup>3</sup> /1000 strokes :	6.0
Check tolerance	
cm <sup>3</sup> /1000S.	: 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm :	1106
guide sleeve	
travel mm :	8.96
Tolerance mm :	+ 0.10
<hr/>	
Rated speed rpm :	300
guide sleeve	
travel mm :	1.85
Tolerance mm :	+ 0.10
<hr/>	
Rated speed rpm :	850
guide sleeve	
travel mm :	5.60
Tolerance mm :	+ 0.25
<hr/>	
Rated speed rpm :	347

guide sleeve	
travel mm :	2.72
Tolerance mm :	+ 0.25
<hr/>	
Rated speed rpm :	397
guide sleeve	
travel mm :	3.26
Tolerance mm :	+ 0.25
<hr/>	
Rated speed rpm :	530
guide sleeve	
travel mm :	3.77
Tolerance mm :	+ 0.25
<hr/>	
Rated speed rpm :	1219
guide sleeve	
travel mm :	12.00
Tolerance mm :	+ 0.25
<hr/>	
Rated speed rpm :	1300
guide sleeve	
travel mm :	13.50
Tolerance mm :	+ 0.50

GUIDE SLEEVE POSITION

control lever	
position degree :	- 1
Rated speed rpm :	1180
<hr/>	
Rack travel in mm :	13.00
Tolerance mm :	+ 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	1050
Aneroid pressure	
hPa :	-
Del. quantity	
cm <sup>3</sup> /1000 strokes :	258.0
Tolerance	
cm <sup>3</sup> /1000 strokes :	+ 1.0
Check tolerance	
cm <sup>3</sup> /1000S.	: + 4.0
Spread	
Tolerance	
cm <sup>3</sup> /1000 strokes :	6.0
Check tolerance	
cm <sup>3</sup> /1000S.	: 9.0

CONTROL LEVER

control lever	
position degree :	119.0
tolerance degree :	+ 4.0

RATED SPEED  
 rack travel mm : 13.00  
 Rated speed rpm : 1095  
 Tolerance 1/min : + 5  
  
 rack travel mm : 4.00  
 Rated speed rpm : 1170  
 Tolerance 1/min : + 15  
  
 rack travel mm : 0.75  
 Tolerance mm : + 0.75  
 Rated speed rpm : 1300

LOW IDLE

control lever  
 position degree : 75.0  
 tolerance degree : + 4.0  
  
 Setting point w/out bumper spring

Rated speed rpm : 200  
 CRT mm min. : > 7.70

Testing:

Rated speed rpm : 300  
 rack travel mm : 5.80  
 Tolerance mm : + 0.10  
  
 Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1050  
 rack travel mm : 14.05  
 Tolerance mm : + 0.05

Rated speed rpm : 950  
 rack travel mm : 14.45  
 Tolerance mm : + 0.10

Rated speed rpm : 850  
 rack travel mm : 14.60  
 Tolerance mm : + 0.10

Rated speed rpm : 750  
 rack travel mm : 14.20  
 Tolerance mm : + 0.05

Rated speed rpm : 700  
 rack travel mm : 13.90  
 Tolerance mm : + 0.10

Rated speed rpm : 650  
 rack travel mm : 13.70  
 Tolerance mm : + 0.10

Rated speed rpm : 550  
 rack travel mm : 13.50  
 Tolerance mm : + 0.15

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 850  
 Pressure hPa : 1200  
 rack travel mm : 14.70  
 Tolerance mm : + 0.10

Rated speed rpm : 500  
 Pressure hPa : -  
 rack travel mm : 7.95  
 Tolerance mm : + 0.15

MEASUREMENT

Rated speed rpm : 850  
 Pressure hPa : 150  
 rack travel mm : 8.90  
 Tolerance mm : + 0.10

Pressure hPa : 550  
 rack travel mm : 12.40  
 Tolerance mm : + 0.05

Start interlock

Rated speed rpm : > 100  
 Rated speed rpm : < 220

Check  
 speed 1/min : > 80  
 Check  
 speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

rack travel mm : 14.60  
 Tolerance mm : + 0.10

Aneroid pressure  
 hPa : -  
 Rated speed rpm : 750

Del. quantity  
cm<sup>3</sup>/1000 strokes : 262.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 550  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 256.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 204.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.5  
Check tolerance  
cm<sup>3</sup>/1000s. : + 4.5

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 133.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100

B24

rack travel mm : 11.60  
Tolerance mm : + 0.40  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 130.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 10.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 14.0

---

LOW IDLE

Rated speed rpm : 300  
Rack travel in mm : 5.80  
Tolerance mm : + 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 10.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 16.12.94  
Test oil : ISO 4113  
Combination No. : 0 402 648 966  
Injection pump  
Pump designation : PE8P120A720LS7189  
: -10  
EP type number : 0 412 628 893  
Governor  
Governor design. : RGV350...1050PA795  
: -19  
Governor no. : 0 421 814 057  
Cust. part No. : 1340523

Customer spec. information  
Customer : SCANIA  
Motor : DSI1458M

## TEST BENCH REQUIREMENTS

Inlet line : 4.1  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 417 413 025  
Inlet press. bar : 2.5  
Tolerance bar : ± 0.1  
Tolerance l/h : ± 20.0  
Test nozzle holder  
assembly : 1 688 901 104  
Opening pressure  
bar : 251.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008  
Outside diameter : 6.0  
x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.05  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 2- 7- 3- 4  
: - 5- 6- 8

Phasing : 0-45-90-135-180  
: -225-270-315  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 350

Rack travel in mm : 4.60  
 Tolerance mm : +- 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 21.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : +- 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : +- 6.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 8.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1108  
 guide sleeve  
 travel mm : 8.05  
 Tolerance mm : +- 0.15

Rated speed rpm : 350  
 guide sleeve  
 travel mm : 1.44  
 Tolerance mm : +- 0.20

Rated speed rpm : 781  
 guide sleeve  
 travel mm : 5.24  
 Tolerance mm : +- 0.25

Rated speed rpm : 411  
 guide sleeve  
 travel mm : 2.06  
 Tolerance mm : +- 0.25

Rated speed rpm : 461  
 guide sleeve  
 travel mm : 2.64  
 Tolerance mm : +- 0.25

Rated speed rpm : 520  
 guide sleeve  
 travel mm : 3.19  
 Tolerance mm : +- 0.25

Rated speed rpm : 1390  
 guide sleeve  
 travel mm : 11.50  
 Tolerance mm : +- 0.50

GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1210

Rack travel in mm : 12.60  
 Tolerance mm : +- 1.30

CONTROL LEVER

control lever  
 position degree : 48.0  
 tolerance degree : +- 4.0

control lever  
 position degree : 107.0  
 tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 12.60  
 Rated speed rpm : 1095  
 Tolerance 1/min : +- 5  
 Check  
 speed 1/min : +- 10

rack travel mm : 4.00  
 Rated speed rpm : 1220  
 Tolerance 1/min : +- 15  
 Check  
 speed 1/min : +- 20

rack travel mm : 0.50  
 Tolerance mm : +- 0.50  
 Rated speed rpm : 1350

LOW IDLE

control lever  
 position degree : 73.0  
 tolerance degree : +- 4.0

control lever  
 position degree : 15.0  
 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 250

CRT mm min. : > 7.50

Testing:

Rated speed rpm : 350

rack travel mm : 4.60  
Tolerance mm : + 0.10  
Rated speed rpm : 325

---

TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 13.65  
Tolerance mm : + 0.05

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 13.65  
Tolerance mm : + 0.05

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 10.00  
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 430  
rack travel mm : 10.90  
Tolerance mm : + 0.20

Pressure hPa : 750  
rack travel mm : 12.65  
Tolerance mm : + 0.05

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 230.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 144.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.00  
Tolerance mm : + 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 160.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 24.0

---

LOW IDLE

Rated speed rpm : 350  
Rack travel in mm : 4.60  
Tolerance mm : + 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 21.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 11.03.98  
Test oil : ISO 4113  
Combination No. : 0 402 648 974  
Injection pump  
Pump designation : PE8P120A320LS7915  
EP type number : 0 412 628 929  
Governor  
Governor design. : RQ300/1150PA1374  
Governor no. : 0 421 801 833

Cust. part No. :

Customer spec. information  
Customer : DHI  
Motor : DV15TC  
Power KW : 272.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2  
Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0  
Overflow valve : 1 417 413 047  
Inlet press. bar : 1.5  
Tolerance bar : + 0.1  
Test nozzle holde  
assembly : 1 688 901 105  
Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5  
Test lines : 1 680 750 089  
Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0  
Prestroke mm : 5.20  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10  
Rack travel in mm : 16.00  
Tolerance mm : + 1.50  
Firing order : 8- 7- 2- 6- 3  
                  : - 5- 4- 1  
Phasing : 0-45-90-135-180  
          : -225-270-315  
Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75  
Start of delivery mark  
Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75  
Barrel no. : 8

BASIC SETTING

Rated speed rpm : 1150  
Rack travel in mm : 14.35  
Tolerance mm : + 0.05



Del. quantity  
cm<sup>3</sup>/1000 strokes : 220.5

---

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

Spreed

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

Rated speed rpm : 300

Rack travel in mm : 6.00  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1208  
guide sleeve  
travel mm : 6.35  
Tolerance mm : ± 0.15

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.20  
Tolerance mm : ± 0.20

Rated speed rpm : 1150  
guide sleeve  
travel mm : 6.00  
Tolerance mm : ± 0.10

Rated speed rpm : 457  
guide sleeve  
travel mm : 3.70

C01

Tolerance mm : ± 0.10

Rated speed rpm : 600  
guide sleeve  
travel mm : 6.00  
Tolerance mm : ± 0.10

Rated speed rpm : 1380  
guide sleeve  
travel mm : 11.50  
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever  
position degree : 109  
Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm : ± 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150  
Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 220.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

CONTROL LEVER

control lever  
position degree : 35.0  
tolerance degree : ± 4.0

control lever  
position degree : 99.0  
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 13.35  
Rated speed rpm : 1202  
Tolerance 1/min : ± 8

rack travel mm : 4.00  
Rated speed rpm : 1295

Tolerance 1/min : ± 15  
rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1350

---

LOW IDLE

control lever  
position degree : 73.0  
tolerance degree : ± 4.0

control lever  
position degree : 10.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 200  
CRT mm min. : > 7.20

Testing:

Rated speed rpm : 300  
rack travel mm : 6.00  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 440  
Tolerance 1/min : ± 20

---

TORQUE CONTROL

Rated speed rpm : 1150  
rack travel mm : 14.35  
Tolerance mm : ± 0.05

Rated speed rpm : 650  
rack travel mm : 14.35  
Tolerance mm : ± 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 14.35  
Tolerance mm : ± 0.05

Rated speed rpm : 500  
Pressure hPa : -

CO2

rack travel mm : 9.00  
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 650  
rack travel mm : 12.30  
Tolerance mm : ± 0.20

Pressure hPa : 250  
rack travel mm : 10.00  
Tolerance mm : ± 0.05

---

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 200

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 240

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 650  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 238.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 137.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

STARTING FUEL DELIVERY

Del. quantity  
cm<sup>3</sup>/1000 strokes : 205.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 14.0

---

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 6.00

Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 04.10.93  
Test oil : ISO 4113  
Combination No. : 0 402 649 800A  
Injection pump  
Pump designation : PE10P120A320LS7809  
EP type number : 0 412 629 800

Governor  
Governor design. : RQ300/1050PA856  
Governor no. : 0 421 801 386

Cust. part No. :

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM443 LA  
Power KW : 370.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 140  
Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1 688 901 019

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

CO4

Test lines : 1 630 750 075

Outside diameter : 8.0

x inside diameter : 2.5  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.05  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 10- 9- 4- 1- 8  
                  : - 7- 6- 3- 5  
                  : - 2

Phasing : 0-45-72-117-144  
          : -189-216-261-288  
          : -333  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 10

CRT ZERO POSITION

Rack travel in mm : 14.00  
Tolerance mm : ± 0.10

BASIC SETTING

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 205.0

---

Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : ± 4.0

---

Speed

---

Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 300

Rack travel in mm : 6.70  
 Tolerance mm : ± 0.10

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 19.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 6.0

Speed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 6.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 10.0

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever  
 position degree : 109  
 Rated speed rpm : 600

Rack travel in mm : 20.00  
 Tolerance mm : ± 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600  
 Aneroid pressure  
 hPa : -  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 205.0

Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 4.0

Speed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
 position degree : 102.0  
 tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 12.70  
 Rated speed rpm : 1103  
 Tolerance 1/min : ± 8

rack travel mm : 4.00  
 Rated speed rpm : 1160  
 Tolerance 1/min : ± 15

rack travel mm : 0.75  
 Tolerance mm : ± 0.75  
 Rated speed rpm : 1300

LOW IDLE

control lever  
 position degree : 77.0  
 tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 100  
 CRT mm min. : > 8.30

Testing:

Rated speed rpm : 300  
 rack travel mm : 6.70  
 Tolerance mm : ± 0.10

rack travel mm : 2.00  
 Rated speed rpm : 400  
 Tolerance 1/min : ± 20

TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 13.80  
Tolerance mm : ± 0.10

Rated speed rpm : 800  
rack travel mm : 14.40  
Tolerance mm : ± 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 600  
Pressure hPa : 700

MEASUREMENT

Rated speed rpm : 600  
Pressure hPa : 600  
rack travel mm : -1.00  
Tolerance mm : ± 0.10

Pressure hPa : 400  
rack travel mm : -1.50  
Tolerance mm : ± 0.10

Pressure hPa : 1100  
rack travel mm : 1.00  
Tolerance mm : ± 0.10

Pressure hPa : 960  
rack travel mm : 0.35  
Tolerance mm : ± 0.05

---

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 220

Check speed 1/min : > 80  
Check speed 1/min : < 240

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 207.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.5

CO6

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 800  
rack travel mm : 14.40  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 219.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 134.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 240.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 14.0

---

LOW IDLE

Rated speed rpm : 300  
Rack travel in mm : 6.70  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 10.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 04.10.93  
Test oil : ISO 4113  
Combination No. : 0 402 649 808A  
Injection pump  
Pump designation : PE10P120A320LS7809  
: -1  
EP type number : 0 412 629 801  
Governor  
Governor design. : RQ300/1050PA762-6  
Governor no. : 0 421 801 471  
Cust. part No. :

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM443 A  
Power KW : 370.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1  
Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0  
Overflow valve : 1 417 413 025  
Inlet press. bar : 1.5  
Tolerance bar : + 0.1  
Overflow quantity  
min. l/h : 140  
Tolerance l/h : + 10.0  
Test nozzle holder  
assembly : 1 688 901 019  
Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

C08

Test lines : 1 680 750 075  
Outside diameter : 8.0  
x inside diameter : 2.5  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0  
Prestroke mm : 4.05  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10  
Rack travel in mm : 20.50  
Tolerance mm : + 0.50  
Firing order : 10- 9- 4- 1- 8  
: - 7- 6- 3- 5  
: - 2  
Phasing : 0-45-72-117-144  
: -189-216-261-288  
: -333  
Tolerance : + 0.30  
Check  
tolerance °I/W : + 0.75  
Start of delivery mark  
Barrel no. : 10

BASIC SETTING

Rated speed rpm : 1050  
Rack travel in mm : 14.05  
Tolerance mm : + 0.05



Del. quantity  
cm<sup>3</sup>/1000 strokes : 201.5

---

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.5

---

Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.5

---

Spread

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 300

Rack travel in mm : 6.70  
Tolerance mm : +- 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever  
position degree : 109  
Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm : +- 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 201.5

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.5

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
position degree : 98.0  
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 13.00  
Rated speed rpm : 1103  
Tolerance 1/min : +- 8

rack travel mm : 4.00  
Rated speed rpm : 1180  
Tolerance 1/min : +- 15

rack travel mm : 0.75  
Tolerance mm : +- 0.75  
Rated speed rpm : 1250

LOW IDLE

control lever  
position degree : 76.0  
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 200  
CRT mm min. : > 9.20

Testing:

Rated speed rpm : 300  
rack travel mm : 6.70  
Tolerance mm : +- 0.10

rack travel mm : 2.00  
Rated speed rpm : 400  
Tolerance 1/min : +- 20

TORQUE CONTROL

Rated speed rpm : 1050

rack travel mm : 14.05  
Tolerance mm : + 0.05  
  
Rated speed rpm : 750  
rack travel mm : 14.80  
Tolerance mm : + 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : -

MEASUREMENT

Pressure hPa : 400  
rack travel mm : 0.70  
Tolerance mm : + 0.10  
  
Pressure hPa : 900  
rack travel mm : 3.15  
Tolerance mm : + 0.15

---

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 220  
?  
Check speed 1/min : > 80  
Check speed 1/min : < 240

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure hPa : -  
Rated speed rpm : 750  
Del. quantity cm<sup>3</sup>/1000 strokes : 210.5  
Tolerance cm<sup>3</sup>/1000 strokes : + 1.5  
Check tolerance cm<sup>3</sup>/1000S. : + 4.5  
Spreed Tolerance cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance cm<sup>3</sup>/1000S. : 12.0

---

Aneroid pressure hPa : -

c10

Rated speed rpm : 500  
Del. quantity cm<sup>3</sup>/1000 strokes : 134.0  
Tolerance cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance cm<sup>3</sup>/1000S. : + 4.0  
Spreed Tolerance cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance cm<sup>3</sup>/1000S. : 12.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity cm<sup>3</sup>/1000 strokes : 210.0  
Tolerance cm<sup>3</sup>/1000 strokes : + 10.0  
Check tolerance cm<sup>3</sup>/1000S. : + 14.0

---

LOW IDLE

Rated speed rpm : 300  
  
Rack travel in mm : 6.70  
Tolerance mm : + 0.10  
Del. quantity cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance cm<sup>3</sup>/1000S. : + 6.0  
Spreed Tolerance cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance cm<sup>3</sup>/1000S. : 10.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 09.08.94  
Test oil : ISO 4113  
Combination No. : 0 402 649 818  
Injection pump  
Pump designation : PE10P120A52OLS7876  
EP type number : 0 412 629 812

Governor  
Governor design. : RQ750PA1158  
Governor no. : 0 421 801 727

Cust. part No. : 3-7276

Customer spec. information  
Customer : MAN  
Motor : D2840LE201  
Power KW : 443.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 417 413 025  
Inlet press. bar : 1.5  
Tolerance bar : ± 0.1  
Test nozzle holder  
assembly : 1 688 901 105  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 089  
Outside diameter : 8.0

C11

x inside diameter : 3.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.55  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 10- 9- 4- 1- 8  
: - 7- 6- 3- 5  
: - 2

Phasing : 0-45-72-117-144  
: -189-216-261-288  
: -333  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 10

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 15.75  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 370.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 17.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 759  
guide sleeve  
travel mm : 5.39  
Tolerance mm : + 0.25

Rated speed rpm : 490  
guide sleeve  
travel mm : -9.81  
Tolerance mm : + 0.25

Rated speed rpm : 840  
guide sleeve  
travel mm : 17.94  
Tolerance mm : + 0.25

Rated speed rpm : 795  
guide sleeve  
travel mm : 10.00  
Tolerance mm : + 0.25

Rated speed rpm : 850  
guide sleeve  
travel mm : 11.50  
Tolerance mm : + 0.50

---

GUIDE SLEEVE POSITION

Rack travel in mm : 89.00  
Tolerance mm : + 4.00

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 370.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 750  
rack travel mm : 14.70

Rated speed rpm : 787  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 950

Rated speed rpm : 751  
rack travel mm : 14.70

Rated speed rpm : 788  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 950

Rated speed rpm : 752  
rack travel mm : 14.70

Rated speed rpm : 789  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 950

Rated speed rpm : 753  
rack travel mm : 14.70

Rated speed rpm : 790  
Tolerance 1/min : ± 4  
rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 950

Rated speed rpm : 754  
rack travel mm : 14.70

Rated speed rpm : 791  
Tolerance 1/min : ± 4  
rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 950

Rated speed rpm : 755  
rack travel mm : 14.70

Rated speed rpm : 792  
Tolerance 1/min : ± 4  
rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 950

---

TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 15.75  
Tolerance mm : ± 0.05

---

LOW IDLE

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 17.0

C13

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 13.02.98  
Test oil : ISO 4113  
Combination No. : 0 402 666 802  
Injection pump  
Pump designation : PE6P120A320/3LS7883  
EP type number : 0 412 626 938  
Governor  
Governor design. : RSV600...1050POA591  
Governor no. : 0 421 833 457

Cust. part No. : 0250746802

---

Customer-spec. information  
Customer : ME-NFZ  
Motor : OM 401 LA  
Power KW : 213.0

---

TEST BENCH REQUIREMENTS

Inlet line : 3.1  
Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0  
Overflow valve : 1 417 413 047  
Inlet press. bar : 1.5  
Tolerance bar : + 0.1  
Tolerance l/h : + 10.0  
Test nozzle holde  
assembly : 1 688 901 105  
Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5  
Test lines : 1 680 750 075

C14

Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 1000

---

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0  
Prestroke mm : 5.25  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10  
Rack travel in mm : 20.50  
Tolerance mm : + 0.50  
Firing order : 6- 3- 5- 2- 4-  
: 1  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.30  
Check  
tolerance °NW : + 0.75  
Start of delivery mark  
Barrel no. : 6

---

BASIC SETTING

Rated speed rpm : 1030  
Rack travel in mm : 12.60  
Tolerance mm : + 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 207.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 600

Rack travel in mm : 3.80  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : + 0.20

governor spring  
pre-tension  
click setting x : 1.50

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1030  
Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 207.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

C15

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spreed  
Tolerance

cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

CONTROL LEVER

control lever  
position degree : 88.0  
tolerance degree : + 4.0

---

LOW IDLE

control lever  
position degree : 71.0  
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 600  
rack travel mm : 3.80  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 630  
Tolerance 1/min : + 30

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

---

TORQUE CONTROL

Rated speed rpm : 1030  
rack travel mm : 12.60  
Tolerance mm : + 0.05

Rated speed rpm : 700  
rack travel mm : 12.60  
Tolerance mm : + 0.10

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 206.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 180.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 14.0

---

LOW IDLE

Rated speed rpm : 600  
Rack travel in mm : 3.80  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 28.11.90  
 Test oil : ISO 4113  
 Combination No. : 0 402 670 804  
 Injection pump  
 Pump designation : PE12P120A320LS7813  
 : -1  
 EP type number : 0 412 620 811  
 Governor  
 Governor design. : RSV350...750POA825  
 : -5  
 Governor no. : 0 421 833 277  
 Cust. part No. :

Customer spec. information  
 Customer : MB-NFZ  
 Motor : OM 444 LA  
 Power KW : 441.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1  
 Test oil inlet  
 temp. °C : 40  
 Tolerance °C : ± 2.0  
 Overflow valve : 1 417 413 025  
 Inlet press. bar : 1.5  
 Overflow quantity  
 min. l/h : 160  
 Tolerance l/h : ± 10.0  
 Test nozzle holde  
 assembly : 1 688 901 105  
 Opening pressure  
 bar : 208.5  
 Tolerance bar : ± 1.5

Test lines : 1 680 750 075  
 Outside diameter : 8.0  
 x inside diameter : 2.5  
 x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
 Set equal delivery quant.  
 per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
 Tolerance bar : ± 1.0  
 Prestroke mm : 5.25  
 Tolerance mm : ± 0.05  
 Check  
 tolerance mm : ± 0.10  
 Rack travel in mm : 20.00  
 Tolerance mm : ± 1.00  
 Firing order : 12- 1- 5- 9- 8  
 : - 3- 4- 11- 10  
 : - 2- 6- 7  
 Phasing : 0-45-60-105-120  
 : -165-180-225-240  
 : -285-300-345  
 Tolerance : ± 0.50  
 Check  
 tolerance °NW : ± 0.75

BASIC SETTING

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 280.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 4.0  
 Spreed

Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 350

Rack travel in mm : 5.70  
 Tolerance mm : + 0.20

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 17.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 6.0

Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

---

GUIDE SLEEVE POSITION

control lever  
 position degree : - 3  
 Rated speed rpm : 800

Rack travel in mm : 0.85  
 Tolerance mm : + 0.55

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
 Aneroid pressure  
 hPa : -

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 280.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0

Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

---

CONTROL LEVER

control lever  
 position degree : 24.0  
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 13.10  
 Rated speed rpm : 753  
 Tolerance 1/min : + 3

rack travel mm : 4.00  
 Rated speed rpm : 785  
 Tolerance 1/min : + 5

rack travel mm : 1.00  
 Tolerance mm : + 0.70  
 Rated speed rpm : 1000

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 750  
 rack travel mm : 15.50

Rated speed rpm : 779  
 Tolerance 1/min : + 4  
 rack travel mm : 4.00

rack travel mm : 1.00  
 Tolerance mm : + 0.70  
 Rated speed rpm : 900

Rated speed rpm : 751  
 rack travel mm : 15.50

Rated speed rpm : 780  
 Tolerance 1/min : + 4  
 rack travel mm : 4.00

rack travel mm : 1.00  
 Tolerance mm : + 0.70  
 Rated speed rpm : 900

Rated speed rpm : 752  
 rack travel mm : 15.50

Rated speed rpm : 781  
 Tolerance 1/min : + 4  
 rack travel mm : 4.00

rack travel mm : 1.00  
 Tolerance mm : + 0.70  
 Rated speed rpm : 900

Rated speed rpm : 753

rack travel mm : 15.50  
Rated speed rpm : 782  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 1.00  
Tolerance mm : + 0.70  
Rated speed rpm : 900

Rated speed rpm : 754  
rack travel mm : 15.50

Rated speed rpm : 783  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 1.00  
Tolerance mm : + 0.70  
Rated speed rpm : 900

Rated speed rpm : 755  
rack travel mm : 15.50

Rated speed rpm : 784  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 1.00  
Tolerance mm : + 0.70  
Rated speed rpm : 900

---

LOW IDLE

control lever  
position degree : 13.0  
tolerance degree : + 4.0

Testing:

Rated speed rpm : 350  
rack travel mm : 5.70  
Tolerance mm : + 0.20

SET IDLE AUXILIARY SPRING

Rated speed rpm : 350

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 600

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 275.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 14.0

---

LOW IDLE

Rated speed rpm : 350  
Rack travel in mm : 5.70  
Tolerance mm : + 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 17.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 20.02.98  
Test oil : ISO 4113  
  
Combination No. : 0 402 670 807  
  
Injection pump  
Pump designation : PE12P120A320LS7814  
: -1  
EP type number : 0 412 620 819  
  
Governor  
Governor design. : RSV375...1050POA535  
: -3  
Governor no. : 0 421 833 328  
  
Cust. part No. :

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM 444 LA  
Power KW : 588.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 2 417 413 077  
  
Inlet press. bar : 2.0  
Tolerance bar : ± 0.1  
  
Overflow quantity  
min. l/h : 160  
Tolerance l/h : ± 20.0  
  
Test nozzle holde  
assembly : 1 688 901 019  
  
Opening pressure  
bar : 208.5

C20

Tolerance bar : ± 1.5  
  
Test lines : 1 680 750 075  
  
Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.85  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 20.00  
Tolerance mm : ± 1.00

Firing order : 12- 1- 5- 9- 3  
: - 3- 4- 11- 10  
: - 2- 6- 7

Phasing : 0-45-60-105-120  
: -165-180-225-240  
: -285-300-345  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10  
Check  
tolerance °NW : ± 0.75

Barrel no. : 12

CRT ZERO POSITION

Rack travel in mm : 14.00  
Tolerance mm : + 0.10

---

BASIC SETTING

Rated speed rpm : 650

---

Rack travel in mm : 14.00  
Tolerance mm : + 0.10

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 263.5

---

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.5

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5

---

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 375

Rack travel in mm : 5.25  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE POSITION

control lever  
position degree : - 3

C21

Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : + 0.20

governor spring  
pre-tension  
click setting x : 3.25

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 650

Aneroid pressure  
hPa : 1100

Del. quantity  
cm<sup>3</sup>/1000 strokes : 263.5

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.5

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

CONTROL LEVER

control lever  
position degree : 100.0  
tolerance degree : + 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1070  
Tolerance 1/min : + 1  
rack travel mm : 12.80

Rated speed rpm : 1154  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 0.90  
Tolerance mm : + 0.60  
Rated speed rpm : 1250

Rated speed rpm : 1072  
Tolerance 1/min : + 1  
rack travel mm : 12.80

Rated speed rpm : 1156  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 0.90

Tolerance mm : ± 0.60  
Rated speed rpm : 1250

Rated speed rpm : 1074  
Tolerance 1/min : ± 1  
rack travel mm : 12.80

Rated speed rpm : 1158  
Tolerance 1/min : ± 4  
rack travel mm : 4.00

rack travel mm : 0.90  
Tolerance mm : ± 0.60  
Rated speed rpm : 1250

Rated speed rpm : 1076  
Tolerance 1/min : ± 1  
rack travel mm : 12.80

Rated speed rpm : 1160  
Tolerance 1/min : ± 4  
rack travel mm : 4.00

rack travel mm : 0.90  
Tolerance mm : ± 0.60  
Rated speed rpm : 1250

Rated speed rpm : 1078  
Tolerance 1/min : ± 1  
rack travel mm : 12.80

Rated speed rpm : 1162  
Tolerance 1/min : ± 4  
rack travel mm : 4.00

rack travel mm : 0.90  
Tolerance mm : ± 0.60  
Rated speed rpm : 1250

Rated speed rpm : 1080  
Tolerance 1/min : ± 1  
rack travel mm : 12.80

Rated speed rpm : 1164  
Tolerance 1/min : ± 4  
rack travel mm : 4.00

rack travel mm : 0.90  
Tolerance mm : ± 0.60  
Rated speed rpm : 1250

---

LOW IDLE

control lever  
position degree : 76.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 100  
CRT mm min. : > 8.00

Testing:

Rated speed rpm : 375  
rack travel mm : 5.25  
Tolerance mm : ± 0.10

rack travel mm : > 2.00  
Rated speed rpm : 410

SET IDLE AUXILIARY SPRING

Rated speed rpm : 100  
rack travel mm : 2.00

---

TORQUE CONTROL

Rated speed rpm : 650  
rack travel mm : 14.00  
Tolerance mm : ± 0.10

Rated speed rpm : 1030  
rack travel mm : 13.80  
Tolerance mm : ± 0.10

Rated speed rpm : 750  
rack travel mm : 14.50  
Tolerance mm : ± 0.10

Rated speed rpm : 950  
rack travel mm : 14.30  
Tolerance mm : ± 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 600  
Pressure hPa : 1100  
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 600  
Pressure hPa : 400  
rack travel mm : -4.00

Tolerance mm : + 0.10  
Pressure hPa : 1370  
rack travel mm : 0.30  
Tolerance mm : + 0.05

Pressure hPa : 650  
rack travel mm : -1.40  
Tolerance mm : + 0.10

---

#### FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1800  
Rated speed rpm : 1030  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 262.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

Aneroid pressure  
hPa : 1800  
Rated speed rpm : 750  
rack travel mm : 14.50  
Tolerance mm : + 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 280.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 154.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 270.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 14.0

---

#### LOW IDLE

Rated speed rpm : 375  
Rack travel in mm : 5.25  
Tolerance mm : + 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 25.03.97  
Test oil : ISO 4113  
Combination No. : 0 402 670 810  
Injection pump  
Pump designation : PE12P120A520/5RS7375  
EP type number : 0 412 620 844

Governor  
Governor design. : RSUV300...900POA361  
Governor no. : 0 421 829 110

Cust. part No. : 1 2277 426

## Customer-spec. information

Customer : MWM  
Motor : TBD 616-V12  
Power KW : 648.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2/3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 120  
Tolerance l/h : ± 20.0

Test nozzle holder  
assembly : 1 688 901 019

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.60  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 13.00  
Tolerance mm : ± 0.50

Firing order : 1- 2- 9-10- 5- 6  
                  : - 11- 12- 3- 4  
                  : - 7- 8

Phasing : 0-30-60-90-120-150  
          : -180-210-240-270  
          : -300-330  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Start of delivery mark  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Barrel no. : 1

## BASIC SETTING



Rated speed rpm : 700

---

Rack travel in mm : 13.30  
Tolerance mm : + 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 325.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Spread

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 325

Rack travel in mm : 4.90  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 30.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : + 0.20

governor spring  
pre-tension  
click setting x : 3.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 325.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
position degree : 105.0  
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 1.00  
Tolerance mm : + 0.70  
Rated speed rpm : 950

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 750  
rack travel mm : 12.30

Rated speed rpm : 784  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 1.00  
Tolerance mm : + 0.70  
Rated speed rpm : 950

Rated speed rpm : 751  
rack travel mm : 12.30

Rated speed rpm : 785  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 1.00  
Tolerance mm : + 0.70  
Rated speed rpm : 950

Rated speed rpm : 752

rack travel mm : 12.30  
Rated speed rpm : 786  
Tolerance 1/min : +- 4  
rack travel mm : 4.00  
rack travel mm : 1.00  
Tolerance mm : +- 0.70  
Rated speed rpm : 950

Rated speed rpm : 753  
rack travel mm : 12.30

Rated speed rpm : 787  
Tolerance 1/min : +- 4  
rack travel mm : 4.00

rack travel mm : 1.00  
Tolerance mm : +- 0.70  
Rated speed rpm : 950

Rated speed rpm : 754  
rack travel mm : 12.30

Rated speed rpm : 788  
Tolerance 1/min : +- 4  
rack travel mm : 4.00

rack travel mm : 1.00  
Tolerance mm : +- 0.70  
Rated speed rpm : 950

Rated speed rpm : 755  
rack travel mm : 12.30

Rated speed rpm : 789  
Tolerance 1/min : +- 4  
rack travel mm : 4.00

rack travel mm : 1.00  
Tolerance mm : +- 0.70  
Rated speed rpm : 950

---

LOW IDLE

control lever  
position degree : 78.0  
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 4.40  
Tolerance mm : +- 0.10

Testing:

Rated speed rpm : 325  
rack travel mm : 4.90  
Tolerance mm : +- 0.10  
rack travel mm : 2.00  
Rated speed rpm : 360  
Tolerance 1/min : +- 30

---

TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 13.30  
Tolerance mm : +- 0.05

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 350.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 20.0  
Check tolerance  
cm<sup>3</sup>/1000s. : +- 24.0

---

LOW IDLE

Rated speed rpm : 325  
Rack travel in mm : 4.90  
Tolerance mm : +- 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 30.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 3.0  
Check tolerance  
cm<sup>3</sup>/1000s. : +- 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 10.04.97  
Test oil : ISO 4113  
  
Combination No. : 0 402 670 812  
  
Injection pump  
Pump designation : PE12P120A320LS7902  
EP type number : 0 412 620 848  
  
Governor  
Governor design. : RSV350...1050POA662  
Governor no. : 0 421 833 579

Cust. part No. : 027 074 4302

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM 444 LA  
Power kW : 448.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0  
  
Overflow valve : 1 417 413 077  
  
Inlet press. bar : 2.0  
Tolerance bar : + 0.1  
  
Overflow quantity  
min. l/h : 110  
Tolerance l/h : + 10.0  
  
Test nozzle holder  
assembly : 1 688 901 105  
  
Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 075  
Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0  
  
Prestroke mm : 5.25  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10  
  
Rack travel in mm : 20.50  
Tolerance mm : + 0.50  
  
Firing order : 12- 1- 5- 9- 8  
                  : - 3- 4- 11- 10  
                  : - 2- 6- 7  
  
Phasing : 0-45-60-105-120  
          : -165-180-225-240  
          : -285-300-345

Start of delivery mark

Tolerance : + 0.10  
Check  
tolerance \*NW : + 0.75  
  
Barrel no. : 12

BASIC SETTING

Rated speed rpm : 1030

Rack travel in mm : 13.40  
Tolerance mm : ± 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 199.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 350

Rack travel in mm : 6.20  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

#### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : ± 0.20

governor spring  
pre-tension  
click setting x : 3.50

---

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1030

Aneroid pressure  
hPa : 1250

Del. quantity  
cm<sup>3</sup>/1000 strokes : 199.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

#### CONTROL LEVER

control lever  
position degree : 94.0  
tolerance degree : ± 4.0

#### ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1070  
rack travel mm : 12.40

Rated speed rpm : 1145  
Tolerance 1/min : ± 4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : ± 0.55  
Rated speed rpm : 1350

Rated speed rpm : 1071  
rack travel mm : 12.40

Rated speed rpm : 1146  
Tolerance 1/min : ± 4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : ± 0.55  
Rated speed rpm : 1350

Rated speed rpm : 1072  
rack travel mm : 12.40

Rated speed rpm : 1147  
Tolerance 1/min : ± 4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1350

Rated speed rpm : 1073  
rack travel mm : 12.40

Rated speed rpm : 1148  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1350

Rated speed rpm : 1074  
rack travel mm : 12.40

Rated speed rpm : 1149  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1350

Rated speed rpm : 1075  
rack travel mm : 12.40

Rated speed rpm : 1150  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1350

---

LOW IDLE

control lever  
position degree : 72.0  
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 9.30

Testing:

Rated speed rpm : 350  
rack travel mm : 6.20  
Tolerance mm : + 0.10

D01

rack travel mm : 2.00  
Rated speed rpm : 405  
Tolerance 1/min : + 30

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

---

TORQUE CONTROL

Rated speed rpm : 1030  
rack travel mm : 13.40  
Tolerance mm : + 0.05

Rated speed rpm : 800  
rack travel mm : 13.40  
Tolerance mm : + 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1250  
rack travel mm : 13.40  
Tolerance mm : + 0.10

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 11.40  
Tolerance mm : + 0.15

MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 550  
rack travel mm : 12.65  
Tolerance mm : + 0.20

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1250  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 200.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0  
Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 162.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 160.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 19.0

---

#### LOW IDLE

Rated speed rpm : 350  
Rack travel in mm : 6.20  
Tolerance mm : + 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

**BOSCH INJ. PUMP TEST SPECIFICATIONS**

**Note remarks**

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 06.03.98  
Test oil : ISO 4113

Combination No. : 0 402 676 830

**Injection pump**  
Pump designation : PE6P120A320LS7894  
EP type number : 0 412 626 954

**Governor**  
Governor design. : RSV600...1050POA642  
Governor no. : 0 421 833 556

Cust. part No. : 0270746002

**Customer-spec. information**

Customer : MB-NFZ  
Motor : OM 441 LA  
Power KW : 285.0

**TEST BENCH REQUIREMENTS**

Inlet line : 3.1

Test oil inlet temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 2.0  
Tolerance bar : ± 0.1

Overflow quantity min. l/h : 105  
Tolerance l/h : ± 10.0

Test nozzle holder assembly : 1 688 901 105

Opening pressure bar : 208.5  
Tolerance bar : ± 1.5

D03

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

**REMARKS**

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant. per values \_\_\_\_\_

**BEGINNING OF DELIVERY**

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.75  
Tolerance mm : ± 0.05  
Check tolerance mm : ± 0.10

Rack travel in mm : 19.00  
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-  
: 1

Phasing : 0-45-120-165-240  
: -285

Tolerance : ± 0.50  
Check tolerance °NW : ± 0.75

**Start of delivery mark**

Tolerance : ± 0.10  
Check tolerance °NW : ± 0.75

Barrel no. : 6

**BASIC SETTING**

Rated speed rpm : 1075

---

Rack travel in mm : 13.70  
Tolerance mm : ± 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 251.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

Speed

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 600

Rack travel in mm : 2.00  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 17.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE POSITION

---

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : ± 0.20

governor spring  
pre-tension  
click setting x : 1.50

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1075

Aneroid pressure

hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 251.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

CONTROL LEVER

control lever

position degree : 89.0

tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 12.70

Rated speed rpm : 1115

Tolerance 1/min : ± 5

Check

speed 1/min : ± 10

---

LOW IDLE

control lever

position degree : 73.0

tolerance degree : ± 4.0

Testing:

Rated speed rpm : 600

rack travel mm : 2.00

Tolerance mm : ± 0.10

rack travel mm : 2.00

Rated speed rpm : 630

Tolerance 1/min : ± 30

---

TORQUE CONTROL

Rated speed rpm : 1075

rack travel mm : 13.70

Tolerance mm : ± 0.05



Rated speed rpm : 800  
rack travel mm : 14.75  
Tolerance mm : ± 0.10

Rated speed rpm : 1000  
rack travel mm : 14.35  
Tolerance mm : ± 0.15

---

End of test specification sheet

---

#### FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 291.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 290.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 19.0

---

#### LOW IDLE

Rated speed rpm : 600  
Rack travel in mm : 2.00  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 17.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 06.03.98  
Test oil : ISO 4113  
  
Combination No. : 0 402 678 803  
  
Injection pump  
Pump designation : PE8P120A320LS7801-1  
EP type number : 0 412 628 818  
  
Governor  
Governor design. : RSV350...750POA825  
                  : -3  
Governor no. : 0 421 333 260

Cust. part No. :

Customer spec. information  
Customer : MB-NFZ  
Motor : OM442A  
Power KW : 240.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0  
  
Overflow valve : 1 417 413 025  
  
Inlet press. bar : 1.5  
Tolerance bar : + 0.1  
  
Overflow quantity  
min. L/h : 110  
Tolerance L/h : + 10.0  
  
Test nozzle holder  
assembly : 1 688 901 019  
  
Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

D06

Test lines : 1 680 750 067  
Outside diameter : 6.0  
x inside diameter : 1.5  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0  
  
Prestroke mm : 5.25  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10  
  
Rack travel in mm : 10.50  
Tolerance mm : + 1.50  
  
Firing order : 8- 7- 2- 6- 3  
                  : - 5- 4- 1  
  
Phasing : 0-45-90-135-180  
          : -225-270-315  
Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75  
  
Start of delivery mark  
Barrel no. : 8

BASIC SETTING

Rated speed rpm : 700  
  
Rack travel in mm : 15.15  
Tolerance mm : + 0.05  
  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 234.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0

---

Spreed

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 350

Rack travel in mm : 5.30  
Tolerance mm : +- 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : +- 0.20

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 234.0

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

CONTROL LEVER

control lever  
position degree : 78.0  
tolerance degree : +- 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 750  
rack travel mm : 14.15

Rated speed rpm : 789  
Tolerance 1/min : +- 4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : +- 0.55  
Rated speed rpm : 900

Rated speed rpm : 751  
rack travel mm : 14.15

Rated speed rpm : 790  
Tolerance 1/min : +- 4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : +- 0.55  
Rated speed rpm : 900

Rated speed rpm : 752  
rack travel mm : 14.15

Rated speed rpm : 791  
Tolerance 1/min : +- 4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : +- 0.55  
Rated speed rpm : 900

Rated speed rpm : 753  
rack travel mm : 14.15

Rated speed rpm : 792  
Tolerance 1/min : +- 4

rack travel mm : 4.00  
rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 900

Rated speed rpm : 754  
rack travel mm : 14.15

Rated speed rpm : 793  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 900

Rated speed rpm : 755  
rack travel mm : 14.15

Rated speed rpm : 794  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 900

---

#### LOW IDLE

control lever  
position degree : 64.0  
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 15.00

Testing:

Rated speed rpm : 350  
rack travel mm : 5.30  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 380  
Tolerance 1/min : + 30

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

---

#### TORQUE CONTROL

DO8

Rated speed rpm : 700  
rack travel mm : 15.15  
Tolerance mm : + 0.05

Rated speed rpm : 600  
rack travel mm : 15.15  
Tolerance mm : + 0.10

---

#### FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 236.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 240.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 14.0

---

#### LOW IDLE

Rated speed rpm : 350  
Rack travel in mm : 5.30  
Tolerance mm : + 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm3/1000S. : 12.0

---

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 27.06.95  
Test oil : ISO 4113  
Combination No. : 0 402 678 828  
Injection pump  
Pump designation : PE8P120A520/5RS7381  
EP type number : 0 412 628 907  
Governor  
Governor design. : RSUV300...900POA363  
Governor no. : 0 421 829 111  
Cust. part No. : 1 2277 434

Customer-spec. information

Customer : MWM  
Motor : TBD 616  
Power KW : 432.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 417 413 025  
Inlet press. bar : 1.5  
Tolerance bar : ± 0.1  
Test nozzle holde  
assembly : 1 688 901 019  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 075  
Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.60  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 13.00  
Tolerance mm : ± 0.50

Firing order : 1- 8- 5- 4- 7  
                  : - 2- 3- 6

Phasing : 0-30-90-120-180  
          : -210-270-300  
Tolerance : ± 0.50  
Check  
tolerance \*Nw : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.30  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 325.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 325

Rack travel in mm : 4.30

Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 30.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE POSITION

governor spring  
pre-tension  
click setting x : 3.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 325.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
position degree : 109.0  
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 1.00  
Tolerance mm : + 0.70  
Rated speed rpm : 950

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 750  
rack travel mm : 12.30

Rated speed rpm : 784  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 1.00  
Tolerance mm : + 0.70  
Rated speed rpm : 950

Rated speed rpm : 751  
rack travel mm : 12.30

Rated speed rpm : 785  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 1.00  
Tolerance mm : + 0.70  
Rated speed rpm : 950

Rated speed rpm : 752  
rack travel mm : 12.30

Rated speed rpm : 786  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 1.00  
Tolerance mm : + 0.70  
Rated speed rpm : 950

Rated speed rpm : 753  
rack travel mm : 12.30

Rated speed rpm : 787  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 1.00

Tolerance mm : + 0.70  
Rated speed rpm : 950

Rated speed rpm : 754  
rack travel mm : 12.30

Rated speed rpm : 788  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 1.00  
Tolerance mm : + 0.70  
Rated speed rpm : 950

Rated speed rpm : 755  
rack travel mm : 12.30

Rated speed rpm : 789  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 1.00  
Tolerance mm : + 0.70  
Rated speed rpm : 950

---

LOW IDLE

control lever  
position degree : 81.0  
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 3.80  
Tolerance mm : + 0.10

Testing:

Rated speed rpm : 325  
rack travel mm : 4.30  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 360  
Tolerance 1/min : + 30

---

TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 13.30  
Tolerance mm : + 0.05

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 350.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 24.0

---

LOW IDLE

Rated speed rpm : 325  
Rack travel in mm : 4.30  
Tolerance mm : + 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 30.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 05.11.96  
Test oil : ISO 4113  
  
Combination No. : 0 402 678 834  
  
Injection pump  
Pump designation : PE8P120A320LS7903  
EP type number : 0 412 628 920  
  
Governor  
Governor design. : RSV600...950P0A663  
Governor no. : 0 421 833 580

Cust. part No. : 027 074 4602

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM442A  
Power KW : 250.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0  
  
Overflow valve : 1 417 413 047  
  
Inlet press. bar : 1.5  
  
Overflow quantity  
min. l/h : 170  
Tolerance l/h : + 20.0  
  
Test nozzle holder  
assembly : 1 688 901 105  
  
Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 075  
Outside diameter : 8.0  
x inside diameter : 2.5  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0  
  
Prestroke mm : 5.25  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10  
  
Rack travel in mm : 20.50  
Tolerance mm : + 0.50  
  
Firing order : 8- 7- 2- 6- 3  
                  : - 5- 4- 1  
  
Phasing : 0-45-90-135-180  
          : -225-270-315  
Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75  
  
Start of delivery mark  
Tolerance : + 0.10  
Check  
tolerance °NW : + 0.50  
  
Barrel no. : 8

BASIC SETTING

Rated speed rpm : 930

---

Rack travel in mm : 13.40  
Tolerance mm : + 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 201.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Spread

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 600

Rack travel in mm : 4.30  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spread  
Tolerance

cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : + 0.20

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 930

Aneroid pressure  
hPa : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 201.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

CONTROL LEVER

control lever  
position degree : 88.0  
tolerance degree : + 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 970  
rack travel mm : 12.40

Rated speed rpm : 1035  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1100

Rated speed rpm : 971  
rack travel mm : 12.40

Rated speed rpm : 1036  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1100

Rated speed rpm : 972  
rack travel mm : 12.40

Rated speed rpm : 1037  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1100

Rated speed rpm : 973  
rack travel mm : 12.40

Rated speed rpm : 1038  
Tolerance 1/min :  $\pm$  4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm :  $\pm$  0.55  
Rated speed rpm : 1100

Rated speed rpm : 974  
rack travel mm : 12.40

Rated speed rpm : 1039  
Tolerance 1/min :  $\pm$  4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm :  $\pm$  0.55  
Rated speed rpm : 1100

Rated speed rpm : 975  
rack travel mm : 12.40

Rated speed rpm : 1040  
Tolerance 1/min :  $\pm$  4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm :  $\pm$  0.55  
Rated speed rpm : 1100

---

#### LOW IDLE

control lever  
position degree : 74.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 600  
rack travel mm : 4.30  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 630  
Tolerance 1/min :  $\pm$  30

#### SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

---

#### TORQUE CONTROL

Rated speed rpm : 930  
rack travel mm : 13.40  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 600  
rack travel mm : 13.70  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : -

Rated speed rpm : 500  
Pressure hPa : 470  
rack travel mm : 0.70  
Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 630  
rack travel mm : 1.75  
Tolerance mm :  $\pm$  0.15

---

#### FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 208.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 142.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 190.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 14.0

---

#### LOW IDLE

Rated speed rpm : 500  
Rack travel in mm : 4.30  
Tolerance mm : +- 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 05.12.94  
Test oil : ISO 4113  
Combination No. : 0 402 746 809  
Injection pump  
Pump designation : PES6P120A32ORS7132  
EP type number : 0 412 726 806  
Governor  
Governor design. : RQ750PA836  
Governor no. : 0 421 801 373

Cust. part No. :

Customer-spec. information  
Customer : PERKINS  
Motor : EAGLE LE  
Power KW : 240.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2  
Test oil inlet temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 417 413 025  
Inlet press. bar : 1.5  
Test nozzle holder assembly : 1 688 901 019  
Opening pressure bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 075  
Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Prestroke mm : 4.55  
Tolerance mm : ± 0.05  
Check tolerance mm : ± 0.10  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
Firing order : 1- 4- 2- 6- 3-  
: 5  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 700  
Rack travel in mm : 13.85  
Tolerance mm : ± 0.05  
Del. quantity cm<sup>3</sup>/1000 strokes : 279.5  
Tolerance cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance cm<sup>3</sup>/1000S. : ± 4.0  
Speed

Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 300

Rack travel in mm : 6.40  
 Tolerance mm : + 0.10

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 41.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 6.0

Speed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

(E) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 761  
 guide sleeve  
 travel mm : 4.04  
 Tolerance mm : + 0.25

Rated speed rpm : 920  
 guide sleeve  
 travel mm : 42.18  
 Tolerance mm : + 0.25

Rated speed rpm : 800  
 guide sleeve  
 travel mm : 8.98  
 Tolerance mm : + 0.25

Rated speed rpm : 807  
 guide sleeve  
 travel mm : 10.00  
 Tolerance mm : + 0.25

Rated speed rpm : 860  
 guide sleeve  
 travel mm : 11.50  
 Tolerance mm : + 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure  
 hPa : -

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 279.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0

Speed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
 position degree : 31.0  
 tolerance degree : + 4.0

control lever  
 position degree : 94.0  
 tolerance degree : + 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 760  
 rack travel mm : 12.90

Rated speed rpm : 788  
 Tolerance 1/min : + 5  
 rack travel mm : 4.00

rack travel mm : 0.50  
 Tolerance mm : + 0.50  
 Rated speed rpm : 820

Rated speed rpm : 761  
 rack travel mm : 12.90

Rated speed rpm : 789  
 Tolerance 1/min : + 5  
 rack travel mm : 4.00

rack travel mm : 0.50  
 Tolerance mm : + 0.50  
 Rated speed rpm : 820

Rated speed rpm : 762  
 rack travel mm : 12.90

Rated speed rpm : 790  
 Tolerance 1/min : + 5  
 rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 820

Rated speed rpm : 763  
rack travel mm : 12.90

Rated speed rpm : 791  
Tolerance 1/min : + 5  
rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 820

Rated speed rpm : 764  
rack travel mm : 12.90

Rated speed rpm : 792  
Tolerance 1/min : + 5  
rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 820

Rated speed rpm : 765  
rack travel mm : 12.90

Rated speed rpm : 793  
Tolerance 1/min : + 5  
rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 820

---

LOW IDLE

control lever  
position degree : 69.0  
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 6.40  
Tolerance mm : + 0.10

---

TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 13.85  
Tolerance mm : + 0.05

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 19.00  
Tolerance mm : + 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 260.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 20.0

---

LOW IDLE

Rated speed rpm : 300  
Rack travel in mm : 6.40  
Tolerance mm : + 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 41.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 11.11.93  
Test oil : ISO 4113

Combination No. : 0 402 746 901

Injection pump  
Pump designation : PES6P120A720RS7224  
EP type number : 0 412 726 840

Governor  
Governor design. : RQV275...1100PA975K  
Governor no. : 0 421 815 266

Cust. part No. :

## Customer-spec. information

Customer : IVECO-UNIC  
Motor : 8460.41.406

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : + 0.1

Overflow quantity  
min. l/h : 140  
Tolerance l/h : + 20.0

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 5.15  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.30  
Check  
tolerance °NW : + 0.75

## BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.75  
Tolerance mm : + 0.05

Rated speed rpm : 275

Rack travel in mm : 5.20  
Tolerance mm : + 0.10



Del. quantity  
 cm<sup>3</sup>/1000 strokes : 26.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000s. : ± 6.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000s. : 12.0

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1140  
 Rack travel in mm : 16.50  
 Tolerance mm : ± 1.30

CONTROL LEVER

control lever  
 position degree : 119.0  
 tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.70  
 Rated speed rpm : 1145  
 Tolerance 1/min : ± 5

rack travel mm : 4.00  
 Rated speed rpm : 1235  
 Tolerance 1/min : ± 15

rack travel mm : 0.50  
 Tolerance mm : ± 0.50  
 Rated speed rpm : 1350

LOW IDLE

control lever  
 position degree : 69.0  
 tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 100  
 CRT mm min. : > 6.70

Testing:

Rated speed rpm : 275  
 rack travel mm : 5.20  
 Tolerance mm : ± 0.10

Rated speed rpm : 335

TORQUE CONTROL

Rated speed rpm : 1100  
 rack travel mm : 12.75  
 Tolerance mm : ± 0.05

Rated speed rpm : 900  
 rack travel mm : 12.70  
 Tolerance mm : ± 0.10

Rated speed rpm : 500  
 rack travel mm : 11.60  
 Tolerance mm : ± 0.10

Rated speed rpm : 700  
 rack travel mm : 12.10  
 Tolerance mm : ± 0.10

Rated speed rpm : 350  
 rack travel mm : 11.20  
 Tolerance mm : ± 0.20

ANEROID/ALTITUDE  
 COMPENSATOR TEST

SETTING

Rated speed rpm : 900  
 Pressure hPa : 1200  
 rack travel mm : 12.75  
 Tolerance mm : ± 0.05

Rated speed rpm : 900  
 Pressure hPa : -  
 rack travel mm : 7.50  
 Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 900  
 Pressure hPa : 410  
 rack travel mm : 8.80  
 Tolerance mm : ± 0.20

Pressure hPa : 750  
rack travel mm : 11.35  
Tolerance mm : + 0.05

---

Start interlock

Rated speed rpm : > 170  
Rated speed rpm : < 220

Check speed 1/min : > 150  
Check speed 1/min : < 240

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 900  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 230.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

---

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 500  
rack travel mm : 11.60  
Tolerance mm : + 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 243.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 120.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 140.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 19.0

---

LOW IDLE

Rated speed rpm : 275  
Rack travel in mm : 5.20  
Tolerance mm : + 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 26.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 09.09.93  
Test oil : ISO 4113  
  
Combination No. : 0 402 746 939  
  
Injection pump  
Pump designation : PES6P130A32ORS7271  
EP type number : 0 412 736 804  
  
Governor  
Governor design. : RQV450...1500PA1049  
Governor no. : 0 421 814 032

Cust. part No. :

Customer-spec. information  
Customer : SEATEK  
Motor : 64/V9

TEST BENCH REQUIREMENTS

Inlet line : 3.2  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 1 417 413 025  
  
Inlet press. bar : 1.5  
Tolerance bar : ± 0.1  
  
Test nozzle holde  
assembly : 1 688 901 105  
  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
  
Test lines : 1 680 750 075  
  
Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 4.45  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
  
Firing order : 1- 5- 3- 6- 2-  
: 4  
  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 450  
  
Rack travel in mm : 3.00  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 23.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever  
position degree : 104  
Rated speed rpm : 1575  
  
Rack travel in mm : 9.40  
Tolerance mm : + 1.30

CONTROL LEVER

control lever  
position degree : 106.0  
tolerance degree : + 4.0

RATED SPEED  
rack travel mm : 9.40  
Rated speed rpm : 1545  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1645  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1750

LOW IDLE

control lever  
position degree : 68.0  
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 100  
CRT mm min. : > 6.20

Testing:

D24

Rated speed rpm : 450  
rack travel mm : 3.00  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 480  
Tolerance 1/min : + 20

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1000  
rack travel mm : 10.45  
Tolerance mm : + 0.05

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 6.40  
Tolerance mm : + 0.10

MEASUREMENT

Rated speed rpm : 500  
  
Pressure hPa : 185  
rack travel mm : 7.40  
Tolerance mm : + 0.20

Pressure hPa : 300  
rack travel mm : 9.45  
Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 140.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0

STARTING FUEL DELIVERY

Rated speed rpm : 100

---

LOW IDLE

Rated speed rpm : 450  
Rack travel in mm : 3.00  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 23.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 07.12.94  
Test oil : ISO 4113

Combination No. : 0 402 746 949A

Injection pump  
Pump designation : PES6P120A720RS7224  
: -2  
EP type number : 0 412 726 893

Governor  
Governor design. : RQV275...1100PA975  
: -3K  
Governor no. : 0 421 815 350

Cust. part No. :

Customer spec. information  
Customer : IVECO-FRANCE  
Motor : 8460.41.406  
Power KW : 253.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : + 0.1

Overflow quantity  
min. l/h : 140  
Tolerance l/h : + 20.0

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5

D26

Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 5.15  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Start of delivery mark

Check  
tolerance °NW : + 0.40

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.75  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 195.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 5.50  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 26.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1155  
guide sleeve  
travel mm : 10.55

Tolerance mm : + 0.15

Rated speed rpm : 275  
guide sleeve  
travel mm : 2.00

Tolerance mm : + 0.20

Rated speed rpm : 764  
guide sleeve  
travel mm : 6.24

Tolerance mm : + 0.25

Rated speed rpm : 430  
guide sleeve  
travel mm : 3.63

Tolerance mm : + 0.25

Rated speed rpm : 1350  
guide sleeve  
travel mm : 13.50

Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1225

Rack travel in mm : 10.00  
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
Aneroid pressure  
hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 195.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
position degree : 119.0  
tolerance degree : + 4.0

RATED SPEED  
rack travel mm : 10.70

Rated speed rpm : 1145  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1215

Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50

Rated speed rpm : 1350

---

LOW IDLE

control lever  
position degree : 66.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 100  
CRT mm min. : > 6.70

Testing:

Rated speed rpm : 275  
rack travel mm : 5.50  
Tolerance mm : ± 0.10

Rated speed rpm : 300

---

TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 11.75  
Tolerance mm : ± 0.05

Rated speed rpm : 800  
rack travel mm : 11.75  
Tolerance mm : ± 0.10

Rated speed rpm : 500  
rack travel mm : 10.95  
Tolerance mm : ± 0.15

Rated speed rpm : 350  
rack travel mm : 11.40  
Tolerance mm : ± 0.20

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 1100  
Pressure hPa : 1200  
rack travel mm : 11.75  
Tolerance mm : ± 0.05

Rated speed rpm : 1100  
Pressure hPa : -  
rack travel mm : 7.60  
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 1100

Pressure hPa : 360  
rack travel mm : 8.70  
Tolerance mm : ± 0.20

Pressure hPa : 600  
rack travel mm : 10.85  
Tolerance mm : ± 0.05

---

Start interlock

Rated speed rpm : > 170  
Rated speed rpm : < 220

Check  
speed 1/min : > 150  
Check  
speed 1/min : < 240

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 500  
rack travel mm : 10.95  
Tolerance mm : ± 0.15  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 220.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 120.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 140.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 19.0



---

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : 5.50

Tolerance mm :  $\pm$  0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 26.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Speed  
Tolerance

cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 29.11.94  
Test oil : ISO 4113  
  
Combination No. : 0 402 746 950A  
  
Injection pump  
Pump designation : PES6P120A720RS7224  
: -2  
EP type number :  
  
Governor  
Governor design. : RQV275...1100PA975  
: -4K  
Governor no. :  
  
Cust. part No. :

---

Customer-spec. information  
Customer : IVECO-FRANCE  
Motor : 8460.41.320

---

TEST BENCH REQUIREMENTS

Inlet line : 4.2  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0  
  
Overflow valve : 1 417 413 025  
  
Inlet press. bar : 1.5  
Tolerance bar : + 0.1  
  
Overflow quantity  
min. l/h : 140  
Tolerance l/h : + 20.0  
  
Test nozzle holder  
assembly : 1 688 901 105  
  
Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

E02

Test lines : 1 680 750 008  
Outside diameter : 6.0  
x inside diameter : 2.0  
x length mm : 600

---

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0  
  
Prestroke mm : 5.15  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10  
  
Rack travel in mm : 10.50  
Tolerance mm : + 1.50  
  
Firing order : 1- 5- 3- 6- 2-  
: 4  
  
Phasing : 0-60-120-180-240  
: -300  
  
Start of delivery mark  
  
Check  
tolerance °NW : + 0.40  
  
Barrel no. : 1

---

BASIC SETTING

Rated speed rpm : 1100  
  
Rack travel in mm : 10.65  
Tolerance mm : + 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 168.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Spread

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 275

Rack travel in mm : 5.30  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 35.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1145  
guide sleeve  
travel mm : 10.40  
Tolerance mm : + 0.15

Rated speed rpm : 275  
guide sleeve  
travel mm : 1.90  
Tolerance mm : + 0.20

Rated speed rpm : 750  
guide sleeve  
travel mm : 6.10  
Tolerance mm : + 0.25

Rated speed rpm : 430  
guide sleeve  
travel mm : 3.60

Tolerance mm : + 0.25

Rated speed rpm : 1360  
guide sleeve  
travel mm : 13.50  
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1235

Rack travel in mm : 10.30  
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
Aneroid pressure  
hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 168.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
position degree : 120.0  
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.30  
Rated speed rpm : 1170  
Tolerance 1/min : + 5  
Check  
speed 1/min : + 10

rack travel mm : 4.00  
Rated speed rpm : 1235  
Tolerance 1/min : + 15  
Check  
speed 1/min : + 20

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1350

---

LOW IDLE

control lever  
position degree : 76.0  
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 100  
CRT mm min. : > 6.80

Testing:

Rated speed rpm : 275  
rack travel mm : 5.30  
Tolerance mm : + 0.10

Rated speed rpm : 335

---

TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 10.65  
Tolerance mm : + 0.05

Rated speed rpm : 700  
rack travel mm : 9.50  
Tolerance mm : + 0.10

Rated speed rpm : 900  
rack travel mm : 10.20  
Tolerance mm : + 0.15

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 1100  
Pressure hPa : 1200  
rack travel mm : 10.65  
Tolerance mm : + 0.05

Rated speed rpm : 1100  
Pressure hPa : -  
rack travel mm : 7.80  
Tolerance mm : + 0.10

MEASUREMENT

Rated speed rpm : 1100

Pressure hPa : 420  
rack travel mm : 8.40  
Tolerance mm : + 0.20

Pressure hPa : 600  
rack travel mm : 10.05  
Tolerance mm : + 0.05

---

Start interlock

Rated speed rpm : > 170  
Rated speed rpm : < 220

Check  
speed 1/min : > 150  
Check  
speed 1/min : < 240

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 163.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

---

rack travel mm : 10.20  
Tolerance mm : + 0.15

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 118.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 150.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 19.0

---

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : 5.30  
Tolerance mm : +- 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 35.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 3.0  
Check tolerance  
cm<sup>3</sup>/1000s. : +- 6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 06.03.98  
Test oil : ISO 4113  
  
Combination No. : 0 402 746 951  
  
Injection pump  
Pump designation : PES6P120A720RS7292  
: -1  
EP type number : 0 412 726 939  
  
Governor  
Governor design. : RQV350...1150PA1074K  
Governor no. : 0 421 815 355  
  
Cust. part No. : 0240747902

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM366LA  
Power KW : 127.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 1 417 413 047  
  
Inlet press. bar : 2.0  
Tolerance bar : ± 0.1  
  
Tolerance l/h : ± 20.0  
  
Test nozzle holder  
assembly : 1 688 901 105  
  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075  
Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 4.00  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
  
Rack travel in mm : 20.50  
Tolerance mm : ± 0.50  
  
Firing order : 1- 5- 3- 6- 2-  
: 4  
  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
  
Start of delivery blocking  
  
°NW after s.o.d. : 3.30  
Tolerance : ± 0.10  
Check  
tolerance °NW : ± 0.75  
  
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1150

---

Rack travel in mm : 14.20  
Tolerance mm : + 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 271.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

#### Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

Rated speed rpm : 350

Rack travel in mm : 6.00  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

#### Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1205  
guide sleeve  
travel mm : 9.35  
Tolerance mm : + 0.15

Rated speed rpm : 350  
guide sleeve  
travel mm : 1.53  
Tolerance mm : + 0.20

Rated speed rpm : 855  
guide sleeve  
travel mm : 5.56

Tolerance mm : + 0.25

Rated speed rpm : 550  
guide sleeve  
travel mm : 3.17  
Tolerance mm : + 0.25

Rated speed rpm : 1480  
guide sleeve  
travel mm : 13.50  
Tolerance mm : + 0.50

---

##### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1329

Rack travel in mm : 13.00  
Tolerance mm : + 1.30

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150  
Aneroid pressure  
hPa : 1500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 271.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

#### Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

##### CONTROL LEVER

control lever  
position degree : 109.0  
tolerance degree : + 4.0

##### RATED SPEED

rack travel mm : 13.20  
Rated speed rpm : 1195  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1320  
Tolerance 1/min : + 15

rack travel mm : 0.70  
Tolerance mm : + 0.70

Rated speed rpm : 1400

---

LOW IDLE

control lever  
position degree : 65.0  
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 250

CRT mm min. : > 6.88

Testing:

Rated speed rpm : 350  
rack travel mm : 6.00  
Tolerance mm : + 0.10

Rated speed rpm : 400

---

TORQUE CONTROL

Rated speed rpm : 1150  
rack travel mm : 14.20  
Tolerance mm : + 0.05

Rated speed rpm : 950  
rack travel mm : 13.80  
Tolerance mm : + 0.10

Rated speed rpm : 750  
rack travel mm : 13.20  
Tolerance mm : + 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 1150  
Pressure hPa : 1500  
rack travel mm : 14.20  
Tolerance mm : + 0.05

Rated speed rpm : 1150  
Pressure hPa : -  
rack travel mm : 10.90  
Tolerance mm : + 0.15

MEASUREMENT

Rated speed rpm : 1150

E08

Pressure hPa : 850  
rack travel mm : 13.60  
Tolerance mm : + 0.05

Pressure hPa : 350  
rack travel mm : 11.70  
Tolerance mm : + 0.15

---

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 280

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 290

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 750  
rack travel mm : 13.20  
Tolerance mm : + 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 262.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 162.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

STARTING FUEL DELIVERY

Set starting CRT at K-cam.

Rated speed rpm : 100



rack travel mm : 13.70  
Tolerance mm : + 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 158.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 15.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 19.0

---

LOW IDLE

Rated speed rpm : 350  
  
Rack travel in mm : 6.00  
Tolerance mm : + 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 8.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 23.11.95  
 Test oil : ISO 4113  
 Combination No. : 0 403 476 096  
 Injection pump  
 Pump designation : PES6MW100/32ORS1132  
 EP type number : 0 413 406 124  
 Governor  
 Governor design. : RSV650...750MW4A311  
 : -4  
 Governor no. : 0 420 085 161  
 Cust. part No. :

Customer-spec. information

Customer : PENTA  
 Motor : TD 61 AG  
 Power KW : 93.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1  
 Test oil inlet  
 temp. °C : 40  
 Tolerance °C : ± 2.0  
 Overflow valve : 1 457 413 010  
 Inlet press. bar : 1.5  
 Test nozzle holde  
 assembly : 0 681 343 009  
 Opening pressure  
 bar : 173.5  
 Tolerance bar : ± 1.5  
 Test lines : 1 680 750 014  
 Outside diameter : 6.0

E10

x inside diameter : 2.0  
 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
 Set equal delivery quant.  
 per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0  
 Tolerance bar : ± 1.0  
 Prestroke mm : 2.95  
 Tolerance mm : ± 0.05  
 Check  
 tolerance mm : ± 0.10  
 Rack travel in mm : 10.50  
 Tolerance mm : ± 1.50  
 Firing order : 1- 5- 3- 6- 2-  
 : 4  
 Phasing : 0-60-120-180-240  
 : -300  
 Tolerance : ± 0.50  
 Check  
 tolerance °Nw : ± 0.75  
 Start of delivery mark  
 Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700  
 Rack travel in mm : 12.55  
 Tolerance mm : ± 0.05  
 Del. quantity  
 cm3/1000 strokes : 122.0  
 Tolerance  
 cm3/1000 strokes : ± 1.0

Check tolerance  
 cm<sup>3</sup>/1000S. : +- 3.0  


---

 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5  


---

 Check tolerance  
 cm<sup>3</sup>/1000S. : 6.0  


---

 Rated speed rpm : 650  
 Rack travel in mm : 6.20  
 Tolerance mm : +- 0.20  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 19.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : +- 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : +- 4.5  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 5.5

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever  
 position degree : - 3  
 Rated speed rpm : 800  
 Rack travel in mm : 0.65  
 Tolerance mm : +- 0.35  
 governor spring  
 pre-tension  
 click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
 Aneroid pressure  
 hPa : -  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 122.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : +- 1.0

Check tolerance  
 cm<sup>3</sup>/1000S. : +- 3.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 6.0

CONTROL LEVER

control lever  
 position degree : 87.0  
 tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 11.50  
 Rated speed rpm : 751  
 Tolerance 1/min : +- 3

rack travel mm : 4.00  
 Rated speed rpm : 781  
 Tolerance 1/min : +- 8

rack travel mm : 1.00  
 Tolerance mm : +- 0.70  
 Rated speed rpm : 950

rack travel mm : 4.00  
 Rated speed rpm : 813  
 Tolerance 1/min : +- 8

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 748  
 rack travel mm : 10.80

Rated speed rpm : 778  
 Tolerance 1/min : +- 5  
 rack travel mm : 4.00

rack travel mm : 1.00  
 Tolerance mm : +- 0.70  
 Rated speed rpm : 950

Rated speed rpm : 749  
 rack travel mm : 10.80

Rated speed rpm : 779  
 Tolerance 1/min : +- 5  
 rack travel mm : 4.00

rack travel mm : 1.00  
 Tolerance mm : +- 0.70  
 Rated speed rpm : 950

Rated speed rpm : 750

rack travel mm : 10.80  
Rated speed rpm : 780  
Tolerance 1/min : + 5  
rack travel mm : 4.00

rack travel mm : 1.00  
Tolerance mm : + 0.70  
Rated speed rpm : 950

Rated speed rpm : 751  
rack travel mm : 10.80

Rated speed rpm : 781  
Tolerance 1/min : + 5  
rack travel mm : 4.00

rack travel mm : 1.00  
Tolerance mm : + 0.70  
Rated speed rpm : 950

Rated speed rpm : 752  
rack travel mm : 10.80

Rated speed rpm : 782  
Tolerance 1/min : + 5  
rack travel mm : 4.00

rack travel mm : 1.00  
Tolerance mm : + 0.70  
Rated speed rpm : 950

Rated speed rpm : 753  
rack travel mm : 10.80

Rated speed rpm : 783  
Tolerance 1/min : + 5  
rack travel mm : 4.00

rack travel mm : 1.00  
Tolerance mm : + 0.70  
Rated speed rpm : 950

---

LOW IDLE

control lever  
position degree : 82.0  
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 650  
rack travel mm : 5.70  
Tolerance mm : + 0.20

Rated speed rpm : 100  
CRT mm min. : > 19.00

Testing:

Rated speed rpm : 650  
rack travel mm : 6.20  
Tolerance mm : + 0.20

---

TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 12.55  
Tolerance mm : + 0.05

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm : + 1.00  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 140.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 13.0

---

LOW IDLE

Rated speed rpm : 650  
Rack travel in mm : 6.20  
Tolerance mm : + 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 07.01.92  
Test oil : ISO 4113  
Combination No. : 0 403 476 099  
Injection pump  
Pump designation : PES6MW100/320RS1209  
EP type number : 0 413 406 200  
Governor  
Governor design. : RSV300...750MW1A802  
Governor no. : 0 420 005 113  
Cust. part No. : 3-7111

Customer spec. information  
Customer : MAN  
Motor : D0826LE20  
Power KW : 116.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1  
Test oil inlet temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 419 992 198  
Inlet press. bar : 1.5  
Test nozzle holder assembly : 1 681 901 101  
Opening pressure bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 008  
Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0  
Prestroke mm : 3.25  
Tolerance mm : ± 0.05  
Check tolerance mm : ± 0.10  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check tolerance °NW : ± 0.75  
Start of delivery mark  
Barrel no. : 1

BASIC SETTING

Del. quantity  
cm3/1000 strokes : 144.0  
Tolerance  
cm3/1000 strokes : ± 1.0  
Check tolerance  
cm3/1000S. : ± 3.0  
Spreed  
Tolerance  
cm3/1000 strokes : 3.5

---

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

---

Rated speed rpm : 300

Rack travel in mm : 7.00

Tolerance mm : ± 0.40

Del. quantity  
cm<sup>3</sup>/1000 strokes : 36.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Spread  
Tolerance

cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.65  
Tolerance mm : ± 0.35

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 144.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Spread  
Tolerance

cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

---

CONTROL LEVER

control lever  
position degree : 88.0  
tolerance degree : ± 4.0

RATED SPEED  
rack travel mm : 13.50  
Rated speed rpm : 750

rack travel mm : 4.00  
Rated speed rpm : 801  
Tolerance 1/min : ± 4

rack travel mm : 1.00  
Tolerance mm : ± 0.70  
Rated speed rpm : 950

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 750  
rack travel mm : 13.50

Rated speed rpm : 801  
Tolerance 1/min : ± 4  
rack travel mm : 4.00

rack travel mm : 1.00  
Tolerance mm : ± 0.70  
Rated speed rpm : 950

Rated speed rpm : 751  
rack travel mm : 13.50

Rated speed rpm : 802  
Tolerance 1/min : ± 4  
rack travel mm : 4.00

rack travel mm : 1.00  
Tolerance mm : ± 0.70  
Rated speed rpm : 950

Rated speed rpm : 752  
rack travel mm : 13.50

Rated speed rpm : 803  
Tolerance 1/min : ± 4  
rack travel mm : 4.00

rack travel mm : 1.00  
Tolerance mm : ± 0.70  
Rated speed rpm : 950

Rated speed rpm : 753  
rack travel mm : 13.50

Rated speed rpm : 804  
Tolerance 1/min : ± 4

rack travel mm : 4.00  
rack travel mm : 1.00  
Tolerance mm : + 0.70  
Rated speed rpm : 950

Rated speed rpm : 754  
rack travel mm : 13.50

Rated speed rpm : 805  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 1.00  
Tolerance mm : + 0.70  
Rated speed rpm : 950

Rated speed rpm : 755  
rack travel mm : 13.50

Rated speed rpm : 806  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 1.00  
Tolerance mm : + 0.70  
Rated speed rpm : 950

---

LOW IDLE

control lever  
position degree : 68.0  
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 7.00  
Tolerance mm : + 0.40

rack travel mm : 2.00  
Rated speed rpm : 340  
Tolerance 1/min : + 30

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 140.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 13.0

---

LOW IDLE

Rated speed rpm : 300  
Rack travel in mm : 7.00  
Tolerance mm : + 0.40  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 36.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 06.06.94  
Test oil : ISO 4113  
  
Combination No. : 0 403 476 099A  
  
Injection pump  
Pump designation : PES6MW100/320RS1209  
EP type number : 0 413 406 200  
  
Governor  
Governor design. : RSV300...900MW1A802  
Governor no. : 0 420 085 113  
  
Cust. part No. : 3-7112

Customer spec. information  
Customer : MAN  
Motor : D0826LE20  
Power KW : 141.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 1 419 992 198  
  
Inlet press. bar : 1.5  
  
Test nozzle holder  
assembly : 1 681 901 101  
  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
  
Test lines : 1 680 750 008  
  
Outside diameter : 6.0  
x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 3.25  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
  
Rack travel in mm : 15.00  
Tolerance mm : ± 1.00  
  
Firing order : 1- 5- 3- 6- 2-  
: 4  
  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 850  
  
Rack travel in mm : 14.85  
Tolerance mm : ± 0.05  
  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 149.0  
  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
  
Speed  
  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0



Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

---

Rated speed rpm : 300

Rack travel in mm : 7.00  
Tolerance mm : ± 0.40

Del. quantity  
cm<sup>3</sup>/1000 strokes : 36.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.65  
Tolerance mm : ± 0.35

governor spring  
pre-tension  
click setting x : 2.75

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850  
Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 149.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

---

CONTROL LEVER

control lever  
position degree : 92.0  
tolerance degree : ± 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 900  
rack travel mm : 13.80

Rated speed rpm : 936  
Tolerance 1/min : ± 4  
rack travel mm : 4.00

rack travel mm : 1.00  
Tolerance mm : ± 0.70  
Rated speed rpm : 1050

Rated speed rpm : 901  
rack travel mm : 13.80

Rated speed rpm : 937  
Tolerance 1/min : ± 4  
rack travel mm : 4.00

rack travel mm : 1.00  
Tolerance mm : ± 0.70  
Rated speed rpm : 1050

Rated speed rpm : 902  
rack travel mm : 13.80

Rated speed rpm : 938  
Tolerance 1/min : ± 4  
rack travel mm : 4.00

rack travel mm : 1.00  
Tolerance mm : ± 0.70  
Rated speed rpm : 1050

Rated speed rpm : 903  
rack travel mm : 13.80

Rated speed rpm : 939  
Tolerance 1/min : ± 4  
rack travel mm : 4.00

rack travel mm : 1.00  
Tolerance mm : ± 0.70  
Rated speed rpm : 1050

Rated speed rpm : 904

rack travel mm : 13.80  
Rated speed rpm : 940  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 1.00  
Tolerance mm : + 0.70  
Rated speed rpm : 1050

Rated speed rpm : 905  
rack travel mm : 13.80

Rated speed rpm : 941  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 1.00  
Tolerance mm : + 0.70  
Rated speed rpm : 1050

---

LOW IDLE

control lever  
position degree : 68.0  
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

Testing:

Rated speed rpm : 300  
rack travel mm : 7.00  
Tolerance mm : + 0.40

rack travel mm : 2.00  
Rated speed rpm : 300  
Tolerance 1/min : + 30

---

TORQUE CONTROL

Rated speed rpm : 850  
rack travel mm : 14.85  
Tolerance mm : + 0.05

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 140.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 13.0

---

LOW IDLE

Rated speed rpm : 300  
Rack travel in mm : 7.00  
Tolerance mm : + 0.40  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 36.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 12.03.98  
Test oil : ISO 4113  
  
Combination No. : 0 403 476 134  
  
Injection pump  
Pump designation : PES6MM100/32ORS1236  
EP type number : 0 413 406 231  
  
Governor  
Governor design. : RSV325...750MW1A202  
: -3  
Governor no. : 0 420 085 237  
  
Cust. part No. : 3-7231

---

Customer spec. information  
Customer : MAN  
Motor : D0826LXE20  
Power kW : 151.0

---

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0  
  
Overflow valve : 1 419 992 198  
  
Inlet press. bar : 1.5  
  
Test nozzle holder  
assembly : 1 681 901 101  
  
Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5  
  
Test lines : 1 680 750 008  
  
Outside diameter : 6.0  
  
x inside diameter : 2.0

E19

x length mm : 600

---

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0  
  
Prestroke mm : 3.25  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10  
  
Rack travel in mm : 15.00  
Tolerance mm : + 1.00  
  
Firing order : 1- 5- 3- 6- 2-  
: 4  
  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75

---

## BASIC SETTING

Rated speed rpm : 700  
  
Rack travel in mm : 13.70  
Tolerance mm : + 0.10  
  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 192.0  
  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
  
Spread  
  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

Rated speed rpm : 325

Rack travel in mm : 7.00

Tolerance mm : ± 0.40

Del. quantity  
cm<sup>3</sup>/1000 strokes : 65.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever  
position degree : - 3

Rated speed rpm : 800

Rack travel in mm : 0.65

Tolerance mm : ± 0.35

governor spring  
pre-tension  
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 192.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

CONTROL LEVER

control lever  
position degree : 88.0  
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 4.00  
Rated speed rpm : 784

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 750  
rack travel mm : 12.70

Rated speed rpm : 784  
Tolerance 1/min : ± 4  
rack travel mm : 4.00

rack travel mm : 1.00  
Tolerance mm : ± 0.70  
Rated speed rpm : 950

Rated speed rpm : 751  
rack travel mm : 12.70

Rated speed rpm : 785  
Tolerance 1/min : ± 4  
rack travel mm : 4.00

rack travel mm : 1.00  
Tolerance mm : ± 0.70  
Rated speed rpm : 950

Rated speed rpm : 752  
rack travel mm : 12.70

Rated speed rpm : 786  
Tolerance 1/min : ± 4  
rack travel mm : 4.00

rack travel mm : 1.00  
Tolerance mm : ± 0.70  
Rated speed rpm : 950

Rated speed rpm : 753  
rack travel mm : 12.70

Rated speed rpm : 787  
Tolerance 1/min : ± 4  
rack travel mm : 4.00

rack travel mm : 1.00  
Tolerance mm : ± 0.70

Rated speed rpm : 950

Rated speed rpm : 754  
rack travel mm : 12.70

Rated speed rpm : 788  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 1.00  
Tolerance mm : + 0.70  
Rated speed rpm : 950

Rated speed rpm : 755  
rack travel mm : 12.70

Rated speed rpm : 789  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 1.00  
Tolerance mm : + 0.70  
Rated speed rpm : 950

---

LOW IDLE

control lever  
position degree : 68.0  
tolerance degree : + 4.0

Testing:

Rated speed rpm : 325  
rack travel mm : 7.00  
Tolerance mm : + 0.40

rack travel mm : 2.00  
Rated speed rpm : 340  
Tolerance 1/min : + 30

---

TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 13.70  
Tolerance mm : + 0.10

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 215.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 13.0

---

LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 7.00  
Tolerance mm : + 0.40  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 65.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 18.03.98  
Test oil : ISO 4113  
Combination No. : 9 400 087 498  
Injection pump  
Pump designation : PES6P120A120RS3344  
EP type number : 9 400 087 090  
Governor  
Governor design. : RGV350...11COPA1216  
Governor no. : 9 420 080 380  
Cust. part No. : 3355978

Customer-spec. information  
Customer : CUMMINS  
Motor : 6 CTA - 250  
Power KW : 184.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 2 417 413 076  
Inlet press. bar : 3.0  
Test nozzle holder  
assembly : 1 688 901 019  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test Lines : 1 680 750 008  
Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Prestroke mm : 4.15  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Rack travel in mm : 15.50  
Tolerance mm : ± 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
Start of delivery blocking  
°NW after s.o.d. : 7.50  
Tolerance : ± 0.10  
Check  
tolerance °NW : ± 0.23  
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100  
Rack travel in mm : 14.55  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 184.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000s. : ± 4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000s. : 9.0

Rated speed rpm : 325

Rack travel in mm : 6.40

Tolerance mm : ± 0.10

Del. quantity

cm<sup>3</sup>/1000 strokes : 44.0

Tolerance

cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance

cm<sup>3</sup>/1000s. : ± 6.0

Spread

Tolerance

cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance

cm<sup>3</sup>/1000s. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1177

guide sleeve

travel mm : 8.60

Tolerance mm : ± 0.10

Rated speed rpm : 325

guide sleeve

travel mm : 1.30

Tolerance mm : ± 0.25

Rated speed rpm : 860

guide sleeve

travel mm : 6.35

Tolerance mm : ± 0.25

Rated speed rpm : 1470

guide sleeve

travel mm : 11.50

Tolerance mm : ± 0.25

GUIDE SLEEVE POSITION

control lever

position degree : - 1

Rated speed rpm : 1150

Rack travel in mm : 16.50

Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100

Aneroid pressure

hPa : 1000

Del. quantity

cm<sup>3</sup>/1000 strokes : 184.5

Tolerance

cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance

cm<sup>3</sup>/1000s. : ± 4.0

Spread

Tolerance

cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance

cm<sup>3</sup>/1000s. : 9.0

CONTROL LEVER

control lever

position degree : 118.0

tolerance degree : ± 6.0

RATED SPEED

rack travel mm : 13.50

Rated speed rpm : 1155

Tolerance 1/min : ± 5

rack travel mm : 4.00

Rated speed rpm : 1335

tolerance 1/min : ± 15

rack travel mm : 0.50

Tolerance mm : ± 0.50

Rated speed rpm : 1450

LOW IDLE

control lever

position degree : 68.0

tolerance degree :  $\pm$  6.0  
Setting point w/out bumper spring

Rated speed rpm : 100  
CRT ~~mm~~ min. :  $>$  9.50

#### Testing:

Rated speed rpm : 325  
rack travel mm : 6.40  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 500

---

#### TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 14.55  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 700  
rack travel mm : 14.55  
Tolerance mm :  $\pm$  0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 1000  
rack travel mm : 14.55  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 500  
Pressure hPa : -

#### MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 680  
rack travel mm : 0.85  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 530  
rack travel mm : 0.30  
Tolerance mm :  $\pm$  0.10

---

#### Start interlock

Rated speed rpm :  $>$  100  
Rated speed rpm :  $<$  245

Check speed 1/min :  $>$  80  
Check speed 1/min :  $<$  265

---

#### FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 184.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 144.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm :  $\pm$  1.00  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 190.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  14.0

---

#### LOW IDLE

Rated speed rpm : 325  
Rack travel in mm : 6.40  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 44.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed



Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

---

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 19.03.98  
Test oil : ISO 4113  
Combination No. : 9 400 087 503  
Injection pump  
Pump designation : PES5P120A720LS7453  
EP type number : F 000 400 203

Governor  
Governor design. : RQV300...950PA1263  
Governor no. : 9 420 080 392

Cust. part No. : 0270740102

Customer spec. information  
Customer : MBB  
Motor : OM 449 LA-EUROII  
Power kW : 205.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.3

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.70  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 21.00

Firing order : 1- 3- 5- 4- 2

Phasing : 0-72-144-216-288  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 950

Rack travel in mm : 13.55  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 247.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 300

Rack travel in mm : 6.20  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 15.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 700  
guide sleeve  
travel mm : 5.45  
Tolerance mm : + 0.25

Rated speed rpm : 1050  
guide sleeve  
travel mm : 7.80  
Tolerance mm : + 0.10

Rated speed rpm : 300  
guide sleeve  
travel mm : 0.75  
Tolerance mm : + 0.25

Rated speed rpm : 500  
guide sleeve  
travel mm : 3.55  
Tolerance mm : + 0.25

Rated speed rpm : 1165  
guide sleeve  
travel mm : 9.45  
Tolerance mm : + 0.25

---

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1120

E27

Rack travel in mm : 16.50  
Tolerance mm : + 1.30

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 950  
Aneroid pressure  
hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 247.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

CONTROL LEVER

control lever  
position degree : 118.0  
tolerance degree : + 6.0

RATED SPEED  
rack travel mm : 12.60  
Rated speed rpm : 1030  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1130  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1220

---

LOW IDLE

control lever  
position degree : 80.0  
tolerance degree : + 6.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 9.80

Testing:

Rated speed rpm : 300  
rack travel mm : 6.20  
Tolerance mm : ± 0.10

Rated speed rpm : 400

---

TORQUE CONTROL

Rated speed rpm : 950  
rack travel mm : 13.55  
Tolerance mm : ± 0.05

Rated speed rpm : 600  
rack travel mm : 13.75  
Tolerance mm : ± 0.05

Rated speed rpm : 800  
rack travel mm : 13.75  
Tolerance mm : ± 0.05

Rated speed rpm : 900  
rack travel mm : 13.65  
Tolerance mm : ± 0.05

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1200  
rack travel mm : 13.80  
Tolerance mm : ± 0.05

Rated speed rpm : 500  
Pressure hPa : -

MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 400  
rack travel mm : 0.85  
Tolerance mm : ± 0.15

Pressure hPa : 750  
rack travel mm : 2.20  
Tolerance mm : ± 0.10

---

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 220

Check speed 1/min : > 80

Check speed 1/min : < 240

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 260.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 800  
rack travel mm : 13.75  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 253.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 140.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 264.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 14.0

---

LOW IDLE

Rated speed rpm : 300  
Rack travel in mm : 6.20  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 15.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 19.03.98  
Test oil : ISO 4113  
  
Combination No. : F 000 409 106  
  
Injection pump  
Pump designation : PES6P120A120RS7416  
EP type number : 0 412 726 959  
  
Governor  
Governor design. : RQV400...1250PA1378K  
Governor no. : F 000 420 503

Cust. part No. : 3933297

Customer-spec. information  
Customer : CUMMINS  
Motor : 6BTA-A  
Power KW : 130.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.2  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 2 417 413 093  
  
Inlet press. bar : 2.0  
Tolerance bar : ± 0.1  
  
Test nozzle holder  
assembly : 1 688 901 103  
  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
  
Test lines : 1 680 750 015  
  
Outside diameter : 6.0

F02

x inside diameter : 3.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 3.60  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
  
Firing order : 1- 5- 3- 6- 2-  
: 4  
  
Phasing : 0-60-120-180-240  
: -300  
  
Start of delivery mark  
  
°NW after s.o.d. : 6.25  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
  
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250  
  
Rack travel in mm : 13.65  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 160.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Rated speed rpm : 420

Rack travel in mm : 6.00  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 15.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1329  
guide sleeve  
travel mm : 7.83  
Tolerance mm : ± 0.15

Rated speed rpm : 400  
guide sleeve  
travel mm : 1.44  
Tolerance mm : ± 0.20

Rated speed rpm : 939  
guide sleeve  
travel mm : 5.18  
Tolerance mm : ± 0.25

Rated speed rpm : 640  
guide sleeve  
travel mm : 3.56

F03

Tolerance mm : ± 0.25

Rated speed rpm : 1690  
guide sleeve

travel mm : 11.50

Tolerance mm : ± 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250

Aneroid pressure  
hPa : 800

Del. quantity  
cm<sup>3</sup>/1000 strokes : 160.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

CONTROL LEVER

control lever  
position degree : 117.0

tolerance degree : ± 6.0

RATED SPEED

rack travel mm : 12.60

Rated speed rpm : 1325

Tolerance 1/min : ± 15

rack travel mm : 4.00

Rated speed rpm : 1480

Tolerance 1/min : ± 5

rack travel mm : 0.50

Tolerance mm : ± 0.50

Rated speed rpm : 1550

LOW IDLE

control lever  
position degree : 71.0

tolerance degree : ± 6.0

Control lever difference

Grad : 46.0

tolerance degree : ± 6.0

Setting point w/out bumper spring

Rated speed rpm : 300  
CRT mm min. : > 7.90

Testing:

Rated speed rpm : 420  
rack travel mm : 6.00  
Tolerance mm : + 0.10

Rated speed rpm : 425

---

TORQUE CONTROL

Rated speed rpm : 1250  
rack travel mm : 13.65  
Tolerance mm : + 0.05

Rated speed rpm : 800  
rack travel mm : 11.85  
Tolerance mm : + 0.10

Rated speed rpm : 500  
rack travel mm : 11.60  
Tolerance mm : + 0.20

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 1250  
Pressure hPa : 800

Rated speed rpm : 1250  
Pressure hPa : -  
rack travel mm : 9.40  
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 1250  
Pressure hPa : 340  
rack travel mm : 12.90  
Tolerance mm : + 0.30

Pressure hPa : 180  
rack travel mm : 10.40  
Tolerance mm : + 0.20

---

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 280

FD4

Check speed 1/min : > 80  
Check speed 1/min : < 290

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 800  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 131.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

rack travel mm : 11.60  
Tolerance mm : + 0.20

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 1250  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 88.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

STARTING FUEL DELIVERY

Set starting CRT at K-cam.

Rated speed rpm : 100  
rack travel mm : 14.10  
Tolerance mm : + 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 155.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 25.0



---

LOW IDLE

Rated speed rpm : 420  
Rack travel in mm : 6.00  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 15.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 13.03.98  
Test oil : ISO 4113  
Combination No. : 0 400 464 105  
Injection pump  
Pump designation : PES4A80D320/3RS1301  
EP type number : 0 410 484 016  
Governor  
Governor design. : RSV325...1500A2C505R  
Governor no. : 0 420 233 187  
Cust. part No. :

Customer-spec. information:  
Customer : MWM  
Motor : D226-4

TEST BENCH REQUIREMENTS

Inlet line : 3.1  
Test oil inlet temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 419 992 198  
Inlet press. bar : 1.0  
Test nozzle holder assembly : 0 681 343 009  
Opening pressure bar : 173.5  
Tolerance bar : ± 1.5  
Test Lines : 1 680 750 014  
Outside diameter : 6.0  
x inside diameter : 2.0

F06

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.25  
Tolerance mm : ± 0.05  
Check tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270  
Tolerance : ± 0.50  
Check tolerance °NW : ± 0.75

BASIC SETTING

Del. quantity cm<sup>3</sup>/1000 strokes : 48.5

Tolerance cm<sup>3</sup>/1000 strokes : ± 0.5

Check tolerance cm<sup>3</sup>/1000S. : ± 2.0

Speed  
Tolerance cm<sup>3</sup>/1000 strokes : 2.5

Check tolerance cm<sup>3</sup>/1000S. : 4.0

Rated speed rpm : 325

Rack travel in mm : 7.00  
 Tolerance mm : + 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 13.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.5  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 3.5

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever  
 position degree : - 3  
 Rated speed rpm : 800  
 Rack travel in mm : 0.65  
 Tolerance mm : + 0.35

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1480  
 Aneroid pressure  
 hPa : -  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 48.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 0.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 2.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 2.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 4.0

CONTROL LEVER

control lever  
 position degree : 55.0  
 tolerance degree : + 4.0

RATED SPEED  
 rack travel mm : 8.00  
 Rated speed rpm : 1525

F07

Tolerance 1/min : + 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1560  
 Tolerance 1/min : + 15  
 rack travel mm : 1.00  
 Tolerance mm : + 0.70  
 Rated speed rpm : 1720  
 rack travel mm : 4.00  
 Rated speed rpm : 1570  
 Tolerance 1/min : + 15

LOW IDLE

control lever  
 position degree : 16.0  
 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 325  
 rack travel mm : 7.50  
 Tolerance mm : + 0.10

Testing:

Rated speed rpm : 325  
 rack travel mm : 7.00  
 Tolerance mm : + 0.10  
 rack travel mm : 2.00  
 Rated speed rpm : 475  
 Tolerance 1/min : + 30

Start interlock

Rated speed rpm : > 100  
 Check  
 speed 1/min : > 80

STARTING FUEL DELIVERY

Rated speed rpm : 100  
 rack travel mm : 20.25  
 Tolerance mm : + 0.75  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 100.0

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 8.0

---

LOW IDLE

Rated speed rpm : 325  
  
Rack travel in mm : 7.00  
Tolerance mm : +- 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.5  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.5

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 23.03.98  
Test oil : ISO 4113  
Combination No. : 0 400 846 443  
Injection pump  
Pump designation : PES6A90D410RS2596  
EP type number : 0 410 896 073  
Governor  
Governor design. : RQV300...1400AB1066  
                  : -1DL  
Governor no. : 0 420 214 251  
Cust. part No. :

---

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM352A  
Power KW : 126.0

---

TEST BENCH REQUIREMENTS

Inlet line : 1.2  
Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0  
Overflow valve : 1 419 992 198  
Inlet press. bar : 1.5  
Test nozzle holder  
assembly : 0 681 343 009  
Opening pressure  
bar : 173.5  
Tolerance bar : + 1.5  
Test lines : 1 680 750 014  
Outside diameter : 6.0

F09

x inside diameter : 2.0  
x length mm : 600

---

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0  
Prestroke mm : 2.05  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10  
Rack travel in mm : 10.50  
Tolerance mm : + 1.50  
Firing order : 1- 5- 3- 6- 2-  
                  : 4  
Phasing : 0-60-120-180-240  
          : -300  
Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75

---

BASIC SETTING

Rated speed rpm : 1400  
Rack travel in mm : 12.45  
Tolerance mm : + 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 74.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 0.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + 2.5  
Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : 4.5

Rated speed rpm : 300

Rack travel in mm : 9.00  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : 4.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1500  
guide sleeve  
travel mm : 8.55

Tolerance mm : + 0.05

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.05

Tolerance mm : + 0.25

Rated speed rpm : 500  
guide sleeve  
travel mm : 2.55

Tolerance mm : + 0.25

Rated speed rpm : 750  
guide sleeve  
travel mm : 4.20

Tolerance mm : +- 0.10

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1500

Rack travel in mm : 16.50

F10

Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400  
Aneroid pressure  
hPa : 700

Del. quantity  
cm<sup>3</sup>/1000 strokes : 74.5

Tolerance  
cm<sup>3</sup>/1000 strokes : + 0.5

Check tolerance  
cm<sup>3</sup>/1000S. : + 2.5

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : 4.5

CONTROL LEVER

control lever  
position degree : 114.0

tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.40  
Rated speed rpm : 1445

Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1595

Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50

Rated speed rpm : 1750

LOW IDLE

control lever  
position degree : 76.0

tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 10.50

Testing:

Rated speed rpm : 300

rack travel mm : 9.00  
Tolerance mm : + 0.10  
Rated speed rpm : 625

---

TORQUE CONTROL

Rated speed rpm : 1400  
rack travel mm : 12.45  
Tolerance mm : + 0.05

Rated speed rpm : 700  
rack travel mm : 13.75  
Tolerance mm : + 0.05

Rated speed rpm : 1000  
rack travel mm : 13.40  
Tolerance mm : + 0.10

Rated speed rpm : 1200  
rack travel mm : 12.75  
Tolerance mm : + 0.15

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 700  
rack travel mm : 13.75  
Tolerance mm : + 0.05

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 12.35  
Tolerance mm : + 0.05

MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 225  
rack travel mm : 12.70  
Tolerance mm : + 0.10

Pressure hPa : 350  
rack travel mm : 13.25  
Tolerance mm : + 0.05

---

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 220

Check speed 1/min : > 80

Check speed 1/min : < 240

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure hPa : 700  
Rated speed rpm : 700  
Del. quantity cm<sup>3</sup>/1000 strokes : 76.0  
Tolerance cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance cm<sup>3</sup>/1000S. : + 4.5

---

rack travel mm : 13.40  
Tolerance mm : + 0.10

---

Aneroid pressure hPa : -  
Rated speed rpm : 500  
Del. quantity cm<sup>3</sup>/1000 strokes : 56.0  
Tolerance cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance cm<sup>3</sup>/1000S. : + 3.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 15.60  
Tolerance mm : + 0.20  
Del. quantity cm<sup>3</sup>/1000 strokes : 78.0  
Tolerance cm<sup>3</sup>/1000 strokes : + 5.0  
Check tolerance cm<sup>3</sup>/1000S. : + 8.0

---

LOW IDLE

Rated speed rpm : 300  
Rack travel in mm : 9.00  
Tolerance mm : + 0.10  
Del. quantity cm<sup>3</sup>/1000 strokes : 12.0  
Tolerance cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 4.0

---

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 23.03.98  
Test oil : ISO 4113  
  
Combination No. : 0 402 066 716  
  
Injection pump  
Pump designation : PES6P110A12ORS3397..  
EP type number : 0 412 016 758  
  
Governor  
Governor design. : RSV500...1000P2A690.  
:  
:  
Governor no. : 0 421 833 612  
  
Cust. part No. : 3930530

---

Customer-spec. information  
Customer : CDC  
Motor : 6CTAA  
Power KW : 151.0

---

TEST BENCH REQUIREMENTS

Inlet line : 3.2  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 2 417 413 093  
  
Inlet press. bar : 2.0  
Tolerance bar : ± 0.1  
  
Test nozzle holder  
assembly : 1 688 901 103  
  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
  
Test lines : 1 680 750 015

Outside diameter : 6.0  
x inside diameter : 3.0  
x length mm : 600

---

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 3.60  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
  
Firing order : 1- 5- 3- 6- 2-  
: 4  
  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
  
Start of delivery blocking  
  
°NW after s.o.d. : 8.25  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
  
Barrel no. : 1  
  
Beginning of delivery difference  
and maximum rack  
travel : 15.00  
Difference °CS : 1.50

---

**BASIC SETTING**

Rated speed rpm : 1000

---

Rack travel in mm : 11.65  
Tolerance mm : ± 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 151.5

---

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

---

Spreed

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

Rated speed rpm : 500

Rack travel in mm : 4.85  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 27.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 6.5

**(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR**

---

**GUIDE SLEEVE POSITION**

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : ± 0.20

F14

governor spring  
pre-tension  
click setting x : 3.50

---

**FULL LOAD DELIVERY AT FULL LOAD STOP**

Rated speed rpm : 1000  
Aneroid pressure

hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 151.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

**CONTROL LEVER**

control lever  
position degree : 95.0  
tolerance degree : ± 4.0

**RATED SPEED**

rack travel mm : 10.60

Rated speed rpm : 1075

Tolerance 1/min : ± 5

Check

speed 1/min : ± 10

rack travel mm : 4.00

Rated speed rpm : 1150

Tolerance 1/min : ± 5

Check

speed 1/min : ± 10

rack travel mm : 0.85

Tolerance mm : ± 0.55

Rated speed rpm : 1275

rack travel mm : 4.00

Rated speed rpm : 1150

Tolerance 1/min : ± 15

Check

speed 1/min : ± 20

---

**LOW IDLE**

control lever  
position degree : 78.0  
tolerance degree : ± 4.0

Control Lever difference  
Grad : 17.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 500  
rack travel mm : 4.35

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 500  
rack travel mm : 4.85  
Tolerance mm : ± 0.10

---

TORQUE CONTROL

Rated speed rpm : 1000  
rack travel mm : 11.65  
Tolerance mm : ± 0.05

Rated speed rpm : 750  
rack travel mm : 12.70  
Tolerance mm : ± 0.20

Rated speed rpm : 850  
rack travel mm : 12.55  
Tolerance mm : ± 0.20

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1200

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 12.00  
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 950  
rack travel mm : 12.70  
Tolerance mm : ± 0.20

Pressure hPa : 850  
rack travel mm : 12.30  
Tolerance mm : ± 0.20

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 184.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0

---

rack travel mm : 12.55  
Tolerance mm : ± 0.20

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 164.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 21.00  
Tolerance mm : ± 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 157.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 25.0

---

LOW IDLE

Rated speed rpm : 500  
Rack travel in mm : 4.85  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 27.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.5

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 25.03.98  
Test oil : ISO 4113  
Combination No. : 0 402 746 643  
Injection pump  
Pump designation : PES6P120A320LS7362  
EP type number : 0 412 726 929  
Governor  
Governor design. : RGV350...11C9FA12C1K  
Governor no. : 0 421 815 456  
Cust. part No. : 1824681C91

Customer spec. information  
Customer : NAVISTAR  
Motor : DTA-530  
Power KW : 245.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2  
Test oil inlet temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 2 417 413 076  
Inlet press. bar : 2.8  
Tolerance bar : ± 0.1  
Test nozzle holder assembly : 1 688 901 103  
Opening pressure bar : 208.5  
Tolerance bar : ± 1.5  
Test U<sub>max</sub> : 1 680 750 008  
Outside diameter : 6.0

F17

x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0  
Prestroke mm : 2.90  
Tolerance mm : ± 0.05  
Check tolerance mm : ± 0.10  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1000  
Rack travel in mm : 14.00  
Tolerance mm : ± 0.05  
Del. quantity cm<sup>3</sup>/1000 strokes : 262.5  
Tolerance cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance cm<sup>3</sup>/1000S. : ± 4.0  
Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Rated speed rpm : 350

Rack travel in mm : 5.90

Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 24.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000

Aneroid pressure  
hPa : 1700

Del. quantity  
cm<sup>3</sup>/1000 strokes : 262.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

CONTROL LEVER

control lever  
position degree : 121.0

tolerance degree : ± 6.0

RATED SPEED

rack travel mm : 13.00

Rated speed rpm : 1065

Tolerance 1/min : ± 15

rack travel mm : 4.00

Rated speed rpm : 1175

Tolerance 1/min : ± 5

rack travel mm : 0.50

Tolerance mm : ± 0.50

Rated speed rpm : 1225

LOW IDLE

control lever

position degree : 78.0

tolerance degree : ± 6.0

Setting point w/out bumper spring

Rated speed rpm : 275

CRT mm min. : > 8.00

Testing:

Rated speed rpm : 350

rack travel mm : 5.90

Tolerance mm : ± 0.10

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 1000

rack travel mm : 14.00

Tolerance mm : ± 0.05

Rated speed rpm : 650

rack travel mm : 13.10

Tolerance mm : ± 0.10

Rated speed rpm : 750

rack travel mm : 13.40

Tolerance mm : ± 0.10

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 1000

Pressure hPa : 1700

rack travel mm : 14.00

Tolerance mm : ± 0.05

Rated speed rpm : 1000

Pressure hPa : -

rack travel mm : 10.55  
Tolerance mm : + 0.20

#### MEASUREMENT

Rated speed rpm : 1000  
Pressure hPa : 1130  
rack travel mm : 13.50  
Tolerance mm : + 0.20  
Pressure hPa : 420  
rack travel mm : 11.55  
Tolerance mm : + 0.05

#### Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 230  
Check speed 1/min : > 80  
Check speed 1/min : < 290

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1700  
Rated speed rpm : 650  
Del. quantity cm<sup>3</sup>/1000 strokes : 238.5  
Tolerance cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance cm<sup>3</sup>/1000S. : + 6.0  
Spreed Tolerance cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure hPa : -  
Rated speed rpm : 650  
Del. quantity cm<sup>3</sup>/1000 strokes : 135.5  
Tolerance cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance cm<sup>3</sup>/1000S. : + 4.0

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.70  
Tolerance mm : + 0.50  
Del. quantity cm<sup>3</sup>/1000 strokes : 168.0  
Tolerance cm<sup>3</sup>/1000 strokes : + 20.0  
Check tolerance cm<sup>3</sup>/1000S. : + 25.0

#### LOW IDLE

Rated speed rpm : 350  
Rack travel in mm : 5.90  
Tolerance mm : + 0.10  
Del. quantity cm<sup>3</sup>/1000 strokes : 24.0  
Tolerance cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance cm<sup>3</sup>/1000S. : + 5.0  
Spreed Tolerance cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance cm<sup>3</sup>/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 18.03.98  
Test oil : ISO 4113

Combination No. : 0 403 466 181

Injection pump  
Pump designation : PES6MM100/120RS1238  
EP type number : 0 413 406 237

Governor  
Governor design. : RSV500...1000MWA409  
Governor no. : 0 420 085 300

Cust. part No. : 3930526

Customer spec. information

Customer : CDC  
Motor : 6 CT  
Power KW : 133.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

F20

x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.80  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Start of delivery blocking

\*NW after s.o.d. : 7.50  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

Beginning of delivery difference

and maximum rack  
travel : 15.00  
Difference ° CS : 2.00



---

**BASIC SETTING**

Rated speed rpm : 1000

---

Rack travel in mm : 11.25  
Tolerance mm : + 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 130.5

---

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Spread

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

---

Rated speed rpm : 500

Rack travel in mm : 5.50  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 21.5

Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

---

**(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR**

---

**GUIDE SLEEVE POSITION**

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : + 0.20

F21

governor spring  
pre-tension  
click setting x : 4.00

---

**FULL LOAD DELIVERY AT FULL LOAD STOP**

Rated speed rpm : 1000  
Aneroid pressure

hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 130.5

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

---

**CONTROL LEVER**

control lever  
position degree : 100.0  
tolerance degree : + 4.0

**RATED SPEED**

rack travel mm : 10.25  
Rated speed rpm : 1055

Tolerance 1/min : + 5  
Check

speed 1/min : + 15

rack travel mm : 4.00  
Rated speed rpm : 1160

Tolerance 1/min : + 5  
Check

speed 1/min : + 10

rack travel mm : 1.00  
Tolerance mm : + 0.70

Rated speed rpm : 1250

rack travel mm : 4.00  
Rated speed rpm : 1160

Tolerance 1/min : + 15  
Check

speed 1/min : + 20

---

**LOW IDLE**

control lever  
position degree : 83.0  
tolerance degree : ± 4.0

Control lever difference  
Grad : 17.0  
tolerance degree : ± 6.0

Setting point w/out bumper spring

Rated speed rpm : 500  
rack travel mm : 5.00  
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 500  
rack travel mm : 5.50  
Tolerance mm : ± 0.10

TORQUE CONTROL

Rated speed rpm : 1000  
rack travel mm : 11.25  
Tolerance mm : ± 0.05

Rated speed rpm : 700  
rack travel mm : 12.85  
Tolerance mm : ± 0.10

Rated speed rpm : 350  
rack travel mm : 12.75  
Tolerance mm : ± 0.20

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1200

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 10.95  
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 880  
rack travel mm : 12.40

F22

Tolerance mm : ± 0.20

Pressure hPa : 600  
rack travel mm : 11.40  
Tolerance mm : ± 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 850  
rack travel mm : 12.75  
Tolerance mm : ± 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 155.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 122.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm : ± 1.00  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 177.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 13.0

LOW IDLE

Rated speed rpm : 500

Rack travel in mm : 5.50  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 21.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000s. : 5.5

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 27.02.98  
Test oil : ISO 4113  
Combination No. : G 401 806 045  
Injection pump  
Pump designation : PE6P120A300/3S131  
EP type number : 0 401 806 045  
Governor  
Governor design. :  
Governor no. :  
Cust. part No. :

Customer-spec. information  
Customer : ALLGEMEIN

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 417 413 025  
Inlet press. bar : 1.5  
Test nozzle holde  
assembly : 1 688 901 019  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test Lines : 1 680 750 067  
Outside diameter : 6.0  
x inside diameter : 1.5  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Prestroke mm : 2.05  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Rack travel in mm : 21.00  
Tolerance mm : ± 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 1000  
Rack travel in mm : 12.05  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 499.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000s. : 9.0

---

Rated speed rpm : 200  
Rack travel in mm : 5.40  
Tolerance mm : + 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 27.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000  
Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 499.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 9.0

---

LOW IDLE

Testing:

Rated speed rpm : 200  
rack travel mm : 5.40  
Tolerance mm : + 0.10

---

TORQUE CONTROL

Rated speed rpm : 1000  
rack travel mm : 12.05  
Tolerance mm : + 0.05

Rated speed rpm : 1000  
rack travel mm : 21.00

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 895.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 10.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 13.0  
Spreed  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

---

---

LOW IDLE

Rated speed rpm : 200  
Rack travel in mm : 5.40  
Tolerance mm : + 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 27.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 07.12.93  
Test oil : ISO 4113  
Combination No. : 0 401 849 748  
Injection pump  
Pump designation : PE10P120A520/4LS3849  
EP type number : 0 411 829 708

Governor  
Governor design. : RQ750PA947  
Governor no. : 0 421 801 513

Cust. part No. : 2-7975

Customer-spec. information  
Customer : MAN  
Motor : D2840 LE  
Power KW : 352.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1  
Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0  
Overflow valve : 1 417 413 025  
Inlet press. bar : 1.5  
Test nozzle holder  
assembly : 1 688 901 019  
Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5  
Test lines : 1 680 750 075  
Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0

Prestroke mm : 4.25  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 10- 9- 4- 1- 8  
: - 7- 6- 3- 5  
: - 2

Phasing : 0-45-72-117-144  
: -189-216-261-288  
: -333  
Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75

Start of delivery mark

Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75

Barrel no. : 10

BASIC SETTING

Del. quantity  
cm<sup>3</sup>/1000 strokes : 230.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0

Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 17.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 758  
guide sleeve  
travel mm : 5.10  
Tolerance mm : +- 0.25

Rated speed rpm : 540  
guide sleeve  
travel mm : -4.66  
Tolerance mm : +- 0.25

Rated speed rpm : 880  
guide sleeve  
travel mm : 17.08  
Tolerance mm : +- 0.25

Rated speed rpm : 818  
guide sleeve  
travel mm : 10.00  
Tolerance mm : +- 0.25

Rated speed rpm : 880  
guide sleeve  
travel mm : 11.50  
Tolerance mm : +- 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 230.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

RATED SPEED

rack travel mm : 0.50  
Tolerance mm : +- 0.50  
Rated speed rpm : 950

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 750  
rack travel mm : 11.30

Rated speed rpm : 794  
Tolerance 1/min : +- 4  
rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : +- 0.50  
Rated speed rpm : 950

Rated speed rpm : 751  
rack travel mm : 11.30

Rated speed rpm : 795  
Tolerance 1/min : +- 4  
rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : +- 0.50  
Rated speed rpm : 950

Rated speed rpm : 752  
rack travel mm : 11.30

Rated speed rpm : 796  
Tolerance 1/min : +- 4  
rack travel mm : 4.00

rack travel mm : 0.50

Tolerance mm : +- 0.50  
Rated speed rpm : 950

Rated speed rpm : 753  
rack travel mm : 11.30

Rated speed rpm : 797  
Tolerance 1/min : +- 4  
rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : +- 0.50  
Rated speed rpm : 950

Rated speed rpm : 754  
rack travel mm : 11.30

Rated speed rpm : 798  
Tolerance 1/min : +- 4  
rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : +- 0.50  
Rated speed rpm : 950

Rated speed rpm : 755  
rack travel mm : 11.30

Rated speed rpm : 799  
Tolerance 1/min : +- 4  
rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : +- 0.50  
Rated speed rpm : 950

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

---

LOW IDLE

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 17.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 6.0  
Spread



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 23.03.98  
Test oil : ISO 4113  
Combination No. : 0 401 856 701  
Injection pump  
Pump designation : PE6P110A721RS3101  
EP type number : 0 411 816 725  
Governor  
Governor design. : RQV25C/120DFA413  
Governor no. : 0 421 813 333  
Cust. part No. :

Customer spec. information  
Customer : STEYR  
Motor : WD615.67  
Power KW : 206.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1  
Test oil inlet temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 417 413 025  
Inlet press. bar : 1.5  
Tolerance bar : ± 0.1  
Test nozzle holder assembly : 0 681 343 009  
Opening pressure bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 089  
Outside diameter : 6.0

G01

x inside diameter : 3.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
: -300

BASIC SETTING

Rated speed rpm : 1200  
Rack travel in mm : 12.05  
Tolerance mm : ± 0.05  
Rated speed rpm : 250  
Rack travel in mm : 5.90  
Tolerance mm : ± 0.10  
Del. quantity cm<sup>3</sup>/1000 strokes : 15.0  
Tolerance cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance cm<sup>3</sup>/1000S. : ± 5.5  
Spreed Tolerance cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance cm<sup>3</sup>/1000S. : 7.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1256  
guide sleeve  
travel mm : 7.59  
Tolerance mm : + 0.25

Rated speed rpm : 250  
guide sleeve  
travel mm : 0.64  
Tolerance mm : + 0.25

Rated speed rpm : 1060  
guide sleeve  
travel mm : 6.07  
Tolerance mm : + 0.25

Rated speed rpm : 564  
guide sleeve  
travel mm : 3.52  
Tolerance mm : + 0.25

Rated speed rpm : 614  
guide sleeve  
travel mm : 3.90  
Tolerance mm : + 0.25

Rated speed rpm : 740  
guide sleeve  
travel mm : 4.41  
Tolerance mm : + 0.25

Rated speed rpm : 1441  
guide sleeve  
travel mm : 10.00  
Tolerance mm : + 0.25

Rated speed rpm : 1560  
guide sleeve  
travel mm : 11.50  
Tolerance mm : + 0.50

---

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1390

Rack travel in mm : 16.50  
Tolerance mm : + 1.30

---

CONTROL LEVER

control lever  
position degree : 45.0  
tolerance degree : + 4.0

---

RATED SPEED

rack travel mm : 11.00  
Rated speed rpm : 1245  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1350  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1450

---

LOW IDLE

control lever  
position degree : 13.0  
tolerance degree : + 4.0

---

Setting point w/out bumper spring

Rated speed rpm : 100  
CRT mm min. : > 7.50

Testing:

Rated speed rpm : 250  
rack travel mm : 5.90  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 390  
Tolerance 1/min : + 30

---

TORQUE CONTROL

Rated speed rpm : 1200  
rack travel mm : 12.05  
Tolerance mm : + 0.05

Rated speed rpm : 700  
rack travel mm : 12.45  
Tolerance mm : + 0.10

Rated speed rpm : 880  
rack travel mm : 12.25  
Tolerance mm : + 0.05

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 700  
rack travel mm : 12.45  
Tolerance mm : ± 0.10

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 10.10  
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 330  
rack travel mm : 10.80  
Tolerance mm : ± 0.20

Pressure hPa : 420  
rack travel mm : 11.55  
Tolerance mm : ± 0.05

---

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 170

Check speed 1/min : > 80  
Check speed 1/min : < 190

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 700  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 167.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

rack travel mm : 12.25  
Tolerance mm : ± 0.05

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 122.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 17.50  
Tolerance mm : ± 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 220.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 19.0

---

LOW IDLE

Rated speed rpm : 250  
Rack travel in mm : 5.90  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 15.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.12.93  
Test oil : ISO 4113  
Combination No. : 0 401 876 791  
Injection pump  
Pump designation : PE6P110A320LS3859  
EP type number : 0 411 816 784  
Governor  
Governor design. : RSV400...1000P1A554  
Governor no. : 0 421 833 376

Cust. part No. : 9273092

Customer-spec. information  
Customer : LIEBHERR  
Motor : D 9306 TI  
Power KW : 200.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.1  
Test oil inlet temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 417 413 025  
Inlet press. bar : 1.5  
Tolerance bar : ± 0.1  
Test nozzle holder assembly : 0 681 343 009  
Opening pressure bar : 173.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 089  
Outside diameter : 8.0

G04

x inside diameter : 3.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Prestroke mm : 3.65  
Tolerance mm : ± 0.05  
Check tolerance mm : ± 0.10  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
Firing order : 1- 6- 3- 5- 2-  
: 4  
Phasing : 0-75-120-195-240  
: -315  
Tolerance : ± 0.50  
Check tolerance °NW : ± 0.75  
Start of delivery mark  
Tolerance : ± 0.50  
Check tolerance °NW : ± 0.75  
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900  
Rack travel in mm : 14.55  
Tolerance mm : ± 0.05  
Del. quantity cm<sup>3</sup>/1000 strokes : 196.0

Tolerance  
 cm<sup>3</sup>/1000 strokes : +- 1.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : +- 3.5

---

Spread

---

Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 7.5

---

Rack travel in mm : 6.00  
 Tolerance mm : +- 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 14.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : +- 2.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : +- 5.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 7.5

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

---

GUIDE SLEEVE POSITION

control lever  
 position degree : - 3  
 Rated speed rpm : 800

Rack travel in mm : 0.50  
 Tolerance mm : +- 0.20

governor spring  
 pre-tension  
 click setting x : 5.00

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Aneroid pressure  
 hPa : -  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 196.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : +- 1.0

Check tolerance  
 cm<sup>3</sup>/1000S. : +- 3.5  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 7.5

---

CONTROL LEVER

control lever  
 position degree : 99.0  
 tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 13.50  
 Rated speed rpm : 935  
 Tolerance 1/min : +- 5

rack travel mm : 4.00  
 Rated speed rpm : 1000  
 Tolerance 1/min : +- 15

rack travel mm : 0.85  
 Tolerance mm : +- 0.55  
 Rated speed rpm : 1260

rack travel mm : 4.00  
 Rated speed rpm : 1030  
 Tolerance 1/min : +- 15

---

LOW IDLE

control lever  
 position degree : 74.0  
 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 400  
 rack travel mm : 5.70  
 Tolerance mm : +- 0.10

Testing:

Rated speed rpm : 400  
 rack travel mm : 6.00  
 Tolerance mm : +- 0.10

rack travel mm : 2.00  
 Rated speed rpm : 525  
 Tolerance 1/min : +- 30

---

**TORQUE CONTROL**

Rated speed rpm : 900  
rack travel mm : 14.55  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 500  
rack travel mm : 14.60  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 350  
rack travel mm : 15.60  
Tolerance mm :  $\pm$  0.30

---

**ANEROID/ALTITUDE  
COMPENSATOR TEST****SETTING**

Rated speed rpm : 550  
Pressure hPa : 1300  
rack travel mm : 14.55  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 550  
Pressure hPa : -  
rack travel mm : 13.75  
Tolerance mm :  $\pm$  0.10

**MEASUREMENT**

Rated speed rpm : 550  
  
Pressure hPa : 710  
rack travel mm : 14.05  
Tolerance mm :  $\pm$  0.05

---

**FUEL DELIVERY CHARACTERISTICS**

---

rack travel mm : 15.60  
Tolerance mm :  $\pm$  0.30

---

Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 178.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.5

---

**STARTING FUEL DELIVERY**

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 160.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  14.0

---

**LOW IDLE**

Rack travel in mm : 6.00  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 14.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 08.07.93  
Test oil : ISO 4113  
Combination No. : 0 401 876 791B  
Injection pump  
Pump designation : PE6P110A32OLS3859  
EP type number : 0 411 816 784  
Governor  
Governor design. : RSV400...1000P1A554  
Governor no. : 0 421 833 376  
Cust. part No. : 9273092

Customer spec. information  
Customer : LIEBHERR  
Motor : D 9306 TI  
Power KW : 200.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1  
Test oil inlet temp. °C : 40  
Tolerance °C : + 2.0  
Overflow valve : 1 417 413 025  
Inlet press. bar : 1.5  
Tolerance bar : + 0.1  
Test nozzle holder assembly : 0 681 343 009  
Opening pressure bar : 173.5  
Tolerance bar : + 1.5  
Test lines : 1 680 750 089  
Outside diameter : 8.0

G07

x inside diameter : 3.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0  
Prestroke mm : 3.65  
Tolerance mm : + 0.05  
Check tolerance mm : + 0.10  
Rack travel in mm : 10.50  
Tolerance mm : + 1.50  
Firing order : 1- 6- 3- 5- 2-  
: 4  
Phasing : 0-75-120-195-240  
: -315  
Tolerance : + 0.50  
Check tolerance °NW : + 0.75  
Start of delivery mark  
Tolerance : + 0.50  
Check tolerance °NW : + 0.75  
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900  
Rack travel in mm : 14.55  
Tolerance mm : + 0.05  
Del. quantity cm<sup>3</sup>/1000 strokes : 196.0

Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : + 3.5

---

Spreed

---

Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 7.5

---

Rack travel in mm : 6.00  
 Tolerance mm : + 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 14.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 2.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 5.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 7.5

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

---

GUIDE SLEEVE POSITION

control lever  
 position degree : - 3  
 Rated speed rpm : 800

Rack travel in mm : 0.50  
 Tolerance mm : + 0.20

governor spring  
 pre-tension  
 click setting x : 5.00

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Aneroid pressure  
 hPa : -  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 196.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
 cm<sup>3</sup>/1000S. : + 3.5  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 7.5

---

CONTROL LEVER

control lever  
 position degree : 99.0  
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 13.50  
 Rated speed rpm : 935  
 Tolerance 1/min : + 5

rack travel mm : 4.00  
 Rated speed rpm : 1000  
 Tolerance 1/min : + 15

rack travel mm : 0.85  
 Tolerance mm : + 0.55  
 Rated speed rpm : 1260

rack travel mm : 4.00  
 Rated speed rpm : 1030  
 Tolerance 1/min : + 15

---

LOW IDLE

control lever  
 position degree : 74.0  
 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 400  
 rack travel mm : 5.70  
 Tolerance mm : + 0.10

Testing:

Rated speed rpm : 400  
 rack travel mm : 6.00  
 Tolerance mm : + 0.10

rack travel mm : 2.00  
 Rated speed rpm : 480  
 Tolerance 1/min : + 30



---

**TORQUE CONTROL**

Rated speed rpm : 900  
rack travel mm : 14.55  
Tolerance mm : ± 0.05

Rated speed rpm : 500  
rack travel mm : 14.60  
Tolerance mm : ± 0.10

Rated speed rpm : 350  
rack travel mm : 15.60  
Tolerance mm : ± 0.30

---

**ANEROID/ALTITUDE  
COMPENSATOR TEST****SETTING**

Rated speed rpm : 550  
Pressure hPa : 1300  
rack travel mm : 14.55  
Tolerance mm : ± 0.05

Rated speed rpm : 550  
Pressure hPa : -  
rack travel mm : 13.75  
Tolerance mm : ± 0.10

**MEASUREMENT**

Rated speed rpm : 550

Pressure hPa : 710  
rack travel mm : 14.05  
Tolerance mm : ± 0.05

---

**FUEL DELIVERY CHARACTERISTICS**

---

rack travel mm : 15.60  
Tolerance mm : ± 0.30

---

Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 178.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.5

---

**STARTING FUEL DELIVERY**

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 160.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 14.0

---

**LOW IDLE**

Rack travel in mm : 6.00  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 14.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.11.93  
Test oil : ISO 4113  
Combination No. : 0 401 878 7178  
Injection pump  
Pump designation : PE8P110A320LS3853-1.  
EP type number : 0 411 818 726  
Governor  
Governor design. : RSV400...1000P1A554  
Governor no. : 0 421 833 376

Cust. part No. : 9273967

Customer-spec. information  
Customer : LIEBHERR  
Motor : D 9308 T  
Power KW : 255.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 417 413 025  
Inlet press. bar : 1.5  
Tolerance bar : ± 0.1  
Test nozzle holder  
assembly : 0 681 343 009  
Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 089  
Outside diameter : 8.0

G10

x inside diameter : 3.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Prestroke mm : 3.85  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Rack travel in mm : 10.50  
Tolerance mm : ± 0.50  
Firing order : 1- 8- 7- 2- 6  
                  : - 3- 5- 4  
Phasing : 0-45-90-135-180  
          : -225-270-315  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 900  
Rack travel in mm : 13.45  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 167.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Speed

Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.0

---

Check tolerance  
 cm<sup>3</sup>/1000s. : 7.5

---

Rack travel in mm : 6.00  
 Tolerance mm : + 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 15.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000s. : + 6.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 6.0  
 Check tolerance  
 cm<sup>3</sup>/1000s. : 10.0

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

---

GUIDE SLEEVE POSITION

control lever  
 position degree : - 3  
 Rated speed rpm : 800

Rack travel in mm : 0.50  
 Tolerance mm : + 0.20

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Aneroid pressure  
 hPa : -

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 167.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000s. : + 4.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.0  
 Check tolerance  
 cm<sup>3</sup>/1000s. : 7.5

---

CONTROL LEVER

control lever  
 position degree : 100.0  
 tolerance degree : + 4.0

RATED SPEED  
 rack travel mm : 12.45  
 Rated speed rpm : 945  
 Tolerance 1/min : + 5

rack travel mm : 4.00  
 Rated speed rpm : 1000  
 Tolerance 1/min : + 15

rack travel mm : 0.85  
 Tolerance mm : + 0.55  
 Rated speed rpm : 1100

rack travel mm : 4.00  
 Rated speed rpm : 1030  
 Tolerance 1/min : + 15

---

LOW IDLE

control lever  
 position degree : 79.0  
 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 400  
 rack travel mm : 5.70  
 Tolerance mm : + 0.10

Testing:

Rated speed rpm : 400  
 rack travel mm : 6.00  
 Tolerance mm : + 0.10

rack travel mm : 2.00  
 Rated speed rpm : 450  
 Tolerance 1/min : + 30

---

TORQUE CONTROL

Rated speed rpm : 900  
 rack travel mm : 13.45  
 Tolerance mm : + 0.05

Rated speed rpm : 500  
 rack travel mm : 13.50  
 Tolerance mm : + 0.10

Rated speed rpm : 350  
 rack travel mm : 14.90

Tolerance mm : ± 0.30

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 550  
Pressure hPa : 1500  
rack travel mm : 13.45  
Tolerance mm : ± 0.05

Rated speed rpm : 550  
Pressure hPa : -  
rack travel mm : 12.55  
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 550  
Pressure hPa : 620  
rack travel mm : 12.80  
Tolerance mm : ± 0.10

Pressure hPa : 685  
rack travel mm : 13.20  
Tolerance mm : ± 0.05

---

FUEL DELIVERY CHARACTERISTICS

---

rack travel mm : 14.90  
Tolerance mm : ± 0.30

---

Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 153.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50

G12

Tolerance mm : ± 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 160.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 14.0

---

LOW IDLE

Rack travel in mm : 6.00  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 15.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 23.03.98  
Test oil : ISO 4113  
  
Combination No. : 0 401 886 702  
  
Injection pump  
Pump designation : PE6P110A721RS3341  
EP type number : 0 411 816 796  
  
Governor  
Governor design. : RSV400...1200P1A527  
: -1  
Governor no. : 0 421 833 455  
  
Cust. part No. : 615.60.08.0039

Customer-spec. information

Customer : SNF  
Motor : WD615.38  
Power KW : 228.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 1 457 413 012  
  
Inlet press. bar : 1.5  
Tolerance bar : ± 0.1  
  
Test nozzle holder  
assembly : 0 681 343 009  
  
Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5  
  
Test lines : 1 680 750 089

Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.85  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 13.80  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 188.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

Rated speed rpm : 400

Rack travel in mm : 3.10  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 14.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.5

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.5

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : ± 0.20

governor spring  
pre-tension  
click setting x : 4.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200  
Aneroid pressure  
hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 188.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

CONTROL LEVER

control lever  
position degree : 116.0  
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 12.80  
Rated speed rpm : 1245

Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1300

Tolerance 1/min : ± 15

rack travel mm : 0.85  
Tolerance mm : ± 0.55

Rated speed rpm : 1400

LOW IDLE

control lever  
position degree : 76.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 400  
rack travel mm : 3.60

Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 9.50

Testing:

Rated speed rpm : 400  
rack travel mm : 3.10

Tolerance mm : ± 0.10

rack travel mm : 2.00

Rated speed rpm : 465  
Tolerance 1/min : + 30

---

TORQUE CONTROL

Rated speed rpm : 1200  
rack travel mm : 13.80  
Tolerance mm : + 0.05

Rated speed rpm : 700  
rack travel mm : 13.80  
Tolerance mm : + 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1200  
rack travel mm : 13.80  
Tolerance mm : + 0.05

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 10.10  
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 360  
rack travel mm : 10.90  
Tolerance mm : + 0.20

Pressure hPa : 600  
rack travel mm : 12.80  
Tolerance mm : + 0.05

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 198.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

---

Aneroid pressure  
hPa : -

G15

Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 123.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 14.30  
Tolerance mm : + 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 205.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 15.0

---

LOW IDLE

Rated speed rpm : 400  
Rack travel in mm : 3.10  
Tolerance mm : + 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 14.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 5.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 20.03.98  
Test oil : ISO 4113  
  
Combination No. : 0 401 946 701  
  
Injection pump  
Pump designation : PE6P120A32ORS3240  
EP type number : 0 411 826 786  
  
Governor  
Governor design. : RQV250...1025PA371  
Governor no. : 0 421 813 303  
  
Cust. part No. : 8193548

Customer-spec. information  
Customer : VOLVO-TRUCK  
Motor : TD122FLs  
Power kW : 240.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1  
  
Vibration damper  
(RoBo diaphragm) : 4.2  
  
Test oil inlet temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 2 457 413 046  
  
Inlet press. bar : 1.5  
Tolerance bar : ± 0.1  
  
Test nozzle holder assembly : 1 688 901 019  
  
Opening pressure bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075  
Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
  
Firing order : 1- 5- 3- 6- 2-  
: 4  
  
Phasing : 0-60-120-180-240  
: -300

BASIC SETTING

Del. quantity  
cm<sup>3</sup>/1000 strokes : 252.0  
  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
  
Spread  
  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0



Rated speed rpm : 250  
Rack travel in mm : 6.60  
Tolerance mm : + 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1100  
Rack travel in mm : 16.50  
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 252.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
position degree : 65.0  
tolerance degree : + 4.0  
control lever  
position degree : 120.0

G17

tolerance degree : + 4.0  
RATED SPEED  
rack travel mm : 12.65  
Rated speed rpm : 1070  
Tolerance 1/min : + 5  
rack travel mm : 4.00  
Tolerance 1/min : + 15  
rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1250

LOW IDLE

control lever  
position degree : 64.0  
tolerance degree : + 4.0

control lever  
position degree : 9.0  
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

Testing:

Rated speed rpm : 250  
rack travel mm : 6.60  
Tolerance mm : + 0.10  
Rated speed rpm : 315

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1200  
rack travel mm : 13.65  
Tolerance mm : + 0.05

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 9.70  
Tolerance mm : + 0.10

MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 780  
rack travel mm : 3.30  
Tolerance mm :  $\pm$  0.10  
  
Pressure hPa : 90  
rack travel mm : 0.25  
Tolerance mm :  $\pm$  0.05

---

End of test specification sheet

---

#### FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 155.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 290.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  24.0

---

#### LOW IDLE

Rated speed rpm : 250  
  
Rack travel in mm : 6.60  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 06.02.95  
Test oil : ISO 4113  
  
Combination No. : 0 402 046 351  
  
Injection pump  
Pump designation : PES6P120A320RS533  
EP type number : 0 412 026 062  
  
Governor  
Governor design. : RQ275/1050PA1083  
Governor no. : 0 421 801 690  
  
Cust. part No. : CCEP 5 138A 66-210

Customer-spec. information

Customer : RVI  
Motor : M1HS062045 B  
Power KW : 186.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0  
  
Overflow valve : 1 417 413 025  
  
Inlet press. bar : 1.5  
Tolerance bar : + 0.1  
  
Test nozzle holde  
assembly : 1 688 901 105  
  
Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5  
  
Test lines : 1 680 750 089  
  
Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0  
  
Prestroke mm : 2.85  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10  
  
Rack travel in mm : 10.50  
Tolerance mm : + 1.50  
  
Firing order : 1- 5- 3- 6- 2-  
: 4  
  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75  
  
Start of delivery mark  
  
Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75  
  
Barrel no. : 1

CRT ZERO POSITION

Rack travel in mm : 10.95  
Tolerance mm : + 0.05

---

**BASIC SETTING**

Rated speed rpm : 700

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 160.0Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

**Spread**Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 275Rack travel in mm : -5.50  
Tolerance mm : ± 0.10Del. quantity  
cm<sup>3</sup>/1000 strokes : 25.0Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0**Spread**Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

**(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR**

---

**GUIDE SLEEVE TRAVEL**Rated speed rpm : 1116  
guide sleeve  
travel mm : 6.38  
Tolerance mm : ± 0.10Rated speed rpm : 250  
guide sleeve  
travel mm : 1.17  
Tolerance mm : ± 0.10

Rated speed rpm : 1050

guide sleeve  
travel mm : 6.00  
Tolerance mm : ± 0.20Rated speed rpm : 480  
guide sleeve  
travel mm : 3.89  
Tolerance mm : ± 0.20Rated speed rpm : 740  
guide sleeve  
travel mm : 6.00  
Tolerance mm : ± 0.20Rated speed rpm : 1360  
guide sleeve  
travel mm : 11.50  
Tolerance mm : ± 0.50

---

**GUIDE SLEEVE POSITION**control lever  
position degree : 109  
Rated speed rpm : 850Rack travel in mm : 20.00  
Tolerance mm : ± 0.80

---

**FULL LOAD DELIVERY AT FULL LOAD STOP**Rated speed rpm : 700  
Aneroid pressure  
hPa : 1000Del. quantity  
cm<sup>3</sup>/1000 strokes : 160.0Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0**Spread**Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

**RATED SPEED**rack travel mm : -1.00  
Rated speed rpm : 1120  
Tolerance 1/min : ± 8rack travel mm : -6.90  
Rated speed rpm : 1230  
Tolerance 1/min : ± 15rack travel mm : -10.45  
Tolerance mm : ± 0.55

Rated speed rpm : 1350

---

LOW IDLE

control lever  
position degree : 252.0  
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : < -4.70

Testing:

Rated speed rpm : 275  
rack travel mm : -5.50  
Tolerance mm : + 0.10

Rated speed rpm : 300

---

TORQUE CONTROL

Rated speed rpm : 700

Rated speed rpm : 1050  
Tolerance mm : + 0.10

Rated speed rpm : 1050  
rack travel mm : 0.50  
Tolerance mm : + 0.20

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1000

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : -1.20  
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 180  
rack travel mm : -0.45  
Tolerance mm : + 0.10

Pressure hPa : 160  
rack travel mm : -0.85  
Tolerance mm : + 0.05

---

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 195

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 215

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 156.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

---

rack travel mm : 0.50  
Tolerance mm : + 0.20

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 103.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

STARTING FUEL DELIVERY

Del. quantity  
cm<sup>3</sup>/1000 strokes : 160.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 19.0

---

LOW IDLE

Rated speed rpm : 275  
Rack travel in mm : -5.50  
Tolerance mm : + 0.10  
Del. quantity  
ca3/1000 strokes : 25.0  
Tolerance  
ca3/1000 strokes : + 2.0  
Check tolerance  
ca3/1000S. : + 5.0  
Spreed  
Tolerance  
ca3/1000 strokes : 8.0  
Check tolerance  
ca3/1000S. : 12.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 19.03.98  
Test oil : ISO 4113  
Combination No. : 0 402 066 706  
Injection pump  
Pump designation : PES6P120A12ORS3358  
EP type number : 0 412 026 784  
Governor  
Governor design. : RSV475...1250P2A613  
: -1  
Governor no. : 0 421 833 505  
Cust. part No. : 3927357

Customer spec. information  
Customer : CDC  
Motor : 6BTA-590 ELITE  
Power KW : 138.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2  
Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0  
Overflow valve : 2 417 413 093  
Inlet press. bar : 1.5  
Test nozzle holder  
assembly : 1 688 901 103  
Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5  
Test lines : 1 680 750 089  
Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0  
Prestroke mm : 2.85  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10  
Rack travel in mm : 10.50  
Tolerance mm : + 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75  
Start of delivery blocking  
°NW after s.o.d. : 7.75  
Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75  
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250  
Rack travel in mm : 11.30  
Tolerance mm : + 0.05

<hr/>	
Del. quantity	
cm <sup>3</sup> /1000 strokes :	140.0
<hr/>	
Tolerance	
cm <sup>3</sup> /1000 strokes :	+ 1.0
<hr/>	
Check tolerance	
cm <sup>3</sup> /1000S. :	+ 3.0
<hr/>	
Spreed	
<hr/>	
Tolerance	
cm <sup>3</sup> /1000 strokes :	4.0
<hr/>	
Check tolerance	
cm <sup>3</sup> /1000S. :	7.5
<hr/>	

Rated speed rpm :	475
<hr/>	
Rack travel in mm :	5.40
Tolerance mm :	+ 0.10
Del. quantity	
cm <sup>3</sup> /1000 strokes :	21.0
Tolerance	
cm <sup>3</sup> /1000 strokes :	+ 2.0
Check tolerance	
cm <sup>3</sup> /1000S. :	+ 4.5
Spreed	
<hr/>	
Tolerance	
cm <sup>3</sup> /1000 strokes :	6.0
Check tolerance	
cm <sup>3</sup> /1000S. :	9.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever	
position degree :	- 3
Rated speed rpm :	800
<hr/>	
Rack travel in mm :	0.50
Tolerance mm :	+ 0.20
<hr/>	
governor spring	
pre-tension	
click setting x :	4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	1250
-------------------	------

Aneroid pressure	
hPa :	1500
Del. quantity	
cm <sup>3</sup> /1000 strokes :	140.0
Tolerance	
cm <sup>3</sup> /1000 strokes :	+ 1.0
Check tolerance	
cm <sup>3</sup> /1000S. :	+ 3.0
Spreed	
<hr/>	
Tolerance	
cm <sup>3</sup> /1000 strokes :	4.0
Check tolerance	
cm <sup>3</sup> /1000S. :	7.5

CONTROL LEVER

control lever	
position degree :	107.0
tolerance degree :	+ 4.0

RATED SPEED

rack travel mm :	10.30
Rated speed rpm :	1295
Tolerance 1/min :	+ 5

rack travel mm :	4.00
Rated speed rpm :	1365
Tolerance 1/min :	+ 15

rack travel mm :	0.85
Tolerance mm :	+ 0.55
Rated speed rpm :	1500

rack travel mm :	4.00
Rated speed rpm :	1375
Tolerance 1/min :	+ 15

LOW IDLE

control lever	
position degree :	83.0
tolerance degree :	+ 4.0

Setting point w/out bumper spring

Rated speed rpm :	475
rack travel mm :	4.90
Tolerance mm :	+ 0.10

Testing:

Rated speed rpm :	475
rack travel mm :	5.40
Tolerance mm :	+ 0.10



rack travel mm : 2.00  
Rated speed rpm : 595  
Tolerance 1/min : +- 30

---

**TORQUE CONTROL**

Rated speed rpm : 1250  
rack travel mm : 11.30  
Tolerance mm : +- 0.05

Rated speed rpm : 750  
rack travel mm : 11.30  
Tolerance mm : +- 0.10

---

**ANEROID/ALTITUDE  
COMPENSATOR TEST**

**SETTING**

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 11.30  
Tolerance mm : +- 0.05

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 9.00  
Tolerance mm : +- 0.20

**MEASUREMENT**

Rated speed rpm : 500  
Pressure hPa : 900  
rack travel mm : 10.75  
Tolerance mm : +- 0.20

Pressure hPa : 560  
rack travel mm : 9.55  
Tolerance mm : +- 0.05

---

**FUEL DELIVERY CHARACTERISTICS**

---

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 750  
Del. quantity  
cm3/1000 strokes : 157.0  
Tolerance  
cm3/1000 strokes : +- 3.0  
Check tolerance  
cm3/1000S. : +- 6.0  
Spreed

Tolerance  
cm3/1000 strokes : 8.0  
Check tolerance  
cm3/1000S. : 12.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm3/1000 strokes : 97.0  
Tolerance  
cm3/1000 strokes : +- 2.0  
Check tolerance  
cm3/1000S. : +- 4.0

---

**STARTING FUEL DELIVERY**

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm : +- 0.75  
Del. quantity  
cm3/1000 strokes : 165.0  
Tolerance  
cm3/1000 strokes : +- 20.0  
Check tolerance  
cm3/1000S. : +- 25.0

---

**LOW IDLE**

Rated speed rpm : 475  
Rack travel in mm : 5.40  
Tolerance mm : +- 0.10  
Del. quantity  
cm3/1000 strokes : 21.0  
Tolerance  
cm3/1000 strokes : +- 2.0  
Check tolerance  
cm3/1000S. : +- 4.5  
Spreed  
Tolerance  
cm3/1000 strokes : 6.0  
Check tolerance  
cm3/1000S. : 9.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 19.03.98  
Test oil : ISO 4113  
  
Combination No. : 0 402 066 712  
  
Injection pump  
Pump designation : PES6P120A120RS3358  
EP type number : 0 412 026 784  
  
Governor  
Governor design. : RSV475...1200P2A675  
Governor no. : 0 421 833 594

Cust. part No. : 3283573

Customer spec. information  
Customer : CDC  
Motor : 6BTA-590 ELITE  
Power KW : 138.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 1.5

Overflow quantity  
min. l/h : 100  
Tolerance l/h : ± 20.0

Test nozzle holder  
assembly : 1 688 901 103

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test Lines : 1 680 750 089  
Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.85  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Start of delivery blocking

\*NW after s.o.d. : 7.75  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1200

---

Rack travel in mm : 11.30  
Tolerance mm : ± 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 140.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

---

Spread

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

---

Rated speed rpm : 485

Rack travel in mm : 5.30  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 21.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : ± 0.20

governor spring  
pre-tension  
click setting x : 3.50

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200

Aneroid pressure  
hPa : 1500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 140.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

---

CONTROL LEVER

control lever  
position degree : 104.0  
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 10.30  
Rated speed rpm : 1265

Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1345

Tolerance 1/min : ± 15

rack travel mm : 0.85  
Tolerance mm : ± 0.55

Rated speed rpm : 1475

rack travel mm : 4.00  
Rated speed rpm : 1355

Tolerance 1/min : ± 15

---

LOW IDLE

control lever  
position degree : 82.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 485

rack travel mm : 4.80  
Tolerance mm : ± 0.10

Testing:

Rated speed rpm : 485  
rack travel mm : 5.30  
Tolerance mm : +- 0.10

rack travel mm : 2.00  
Rated speed rpm : 605  
Tolerance 1/min : +- 30

TORQUE CONTROL

Rated speed rpm : 1200  
rack travel mm : 11.30  
Tolerance mm : +- 0.05

Rated speed rpm : 750  
rack travel mm : 11.30  
Tolerance mm : +- 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 11.30  
Tolerance mm : +- 0.05

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 9.00  
Tolerance mm : +- 0.20

MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 900  
rack travel mm : 10.90  
Tolerance mm : +- 0.20

Pressure hPa : 560  
rack travel mm : 9.55  
Tolerance mm : +- 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1500  
Rated speed rpm : 750  
Del. quantity cm3/1000 strokes : 157.0

Tolerance

cm3/1000 strokes : +- 3.0

Check tolerance cm3/1000S. : +- 6.0

Speed Tolerance

cm3/1000 strokes : 8.0

Check tolerance cm3/1000S. : 12.0

Aneroid pressure

hPa : -  
Rated speed rpm : 500

Del. quantity cm3/1000 strokes : 97.0

Tolerance cm3/1000 strokes : +- 2.0

Check tolerance cm3/1000S. : +- 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25

Tolerance mm : +- 0.75  
Del. quantity

cm3/1000 strokes : 170.0

Tolerance cm3/1000 strokes : +- 20.0

Check tolerance cm3/1000S. : +- 25.0

LOW IDLE

Rated speed rpm : 485

Rack travel in mm : 5.30  
Tolerance mm : +- 0.10

Del. quantity cm3/1000 strokes : 21.0

Tolerance cm3/1000 strokes : +- 2.0

Check tolerance cm3/1000S. : +- 4.5

Speed Tolerance

cm3/1000 strokes : 6.0

Check tolerance cm3/1000S. : 9.0

---

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 17.03.98  
Test oil : ISO 4113

Combination No. : 0 402 086 705

Injection pump  
Pump designation : PES6P100B321RS3388  
EP type number : 0 412 006 714

Governor  
Governor design. : RSV400...1125POA694  
Governor no. : 0 421 833 617

Cust. part No. : 51.10100-7606

Customer-spec. information  
Customer : MAN  
Motor : D0826 LE527  
Power KW : 169.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0  
Tolerance bar : ± 0.1

Overflow quantity min. l/h : 150  
Tolerance l/h : ± 10.0

Test nozzle holder assembly : 1 688 901 101

Opening pressure bar : 208.5  
Tolerance bar : ± 1.5

H02

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant. per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.30  
Tolerance mm : ± 0.05  
Check tolerance mm : ± 0.10

Rack travel in mm : 13.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check tolerance °NW : ± 0.75

Start of delivery blocking  
Tolerance : ± 0.10  
Check tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 925

Rack travel in mm : 13.90  
 Tolerance mm : + 0.05

---

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 169.0

---

Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0

---

Speed

---

Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 6.0

---

Rated speed rpm : 400

Rack travel in mm : 4.80  
 Tolerance mm : + 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 25.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 6.0  
 Speed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 5.5

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

---

GUIDE SLEEVE POSITION

control lever  
 position degree : - 3

governor spring  
 pre-tension  
 click setting x : 5.50

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 925

Aneroid pressure  
 hPa : 1500  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 169.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0  
 Speed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 6.0

RATED SPEED

rack travel mm : 12.10  
 Rated speed rpm : 1175  
 Tolerance 1/min : + 5

rack travel mm : 0.85  
 Tolerance mm : + 0.55  
 Rated speed rpm : 1400

---

LOW IDLE

Setting point w/out bumper spring

Rated speed rpm : 400  
 rack travel mm : 4.30  
 Tolerance mm : + 0.10

Testing:

Rated speed rpm : 400  
 rack travel mm : 4.80  
 Tolerance mm : + 0.10

---

TORQUE CONTROL

Rated speed rpm : 925  
 rack travel mm : 13.90  
 Tolerance mm : + 0.05

Rated speed rpm : 1125  
 rack travel mm : 13.10  
 Tolerance mm : + 0.10

Rated speed rpm : 700  
 rack travel mm : 14.00  
 Tolerance mm : + 0.10

Rated speed rpm : 1000  
 rack travel mm : 13.70  
 Tolerance mm : + 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 14.00  
Tolerance mm : + 0.10

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 9.50  
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 150  
rack travel mm : 10.00  
Tolerance mm : + 0.05

Pressure hPa : 800  
rack travel mm : 13.20  
Tolerance mm : + 0.15

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 1125  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 146.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

---

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 700  
rack travel mm : 14.00  
Tolerance mm : + 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 180.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 90.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 9.50  
Tolerance mm : + 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 112.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 14.0

---

LOW IDLE

Rated speed rpm : 400  
Rack travel in mm : 4.80  
Tolerance mm : + 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 25.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

---

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 29.11.94  
Test oil : ISO 4113  
  
Combination No. : 0 402 646 605A  
  
Injection pump  
Pump designation : PE6P130A720RS7197  
EP type number :  
  
Governor  
Governor design. : RQV300...1000PA946  
                  : -2  
Governor no. :  
  
Cust. part No. :

Customer-spec. information  
Customer : IVECO-UNIC  
Motor : 8210.22.800  
Power KW : 224.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 1 417 413 025  
  
Inlet press. bar : 1.5  
Tolerance bar : ± 0.1  
  
Overflow quantity  
min. l/h : 140  
Tolerance l/h : ± 20.0  
  
Test nozzle holde  
assembly : 1 688 901 105  
  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

H05

Test lines : 1 680 750 075  
Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 5.05  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
  
Firing order : 1- 5- 3- 6- 2-  
                  : 4  
  
Phasing : 0-60-120-180-240  
          : -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
  
Start of delivery mark  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
  
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000  
  
Rack travel in mm : 11.30

Tolerance mm : ± 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 191.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

Speed

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

Rated speed rpm : 300

Rack travel in mm : 5.20  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 22.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 7.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1045  
guide sleeve  
travel mm : 8.40  
Tolerance mm : ± 0.15

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.20  
Tolerance mm : ± 0.20

Rated speed rpm : 700  
guide sleeve  
travel mm : 5.20  
Tolerance mm : ± 0.25

Rated speed rpm : 400

H06

guide sleeve  
travel mm : 2.60  
Tolerance mm : ± 0.25

Rated speed rpm : 1350  
guide sleeve  
travel mm : 11.50  
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1130

Rack travel in mm : 10.90  
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000  
Aneroid pressure  
hPa : 900

Del. quantity  
cm<sup>3</sup>/1000 strokes : 191.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

CONTROL LEVER

control lever  
position degree : 116.0  
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 10.90  
Rated speed rpm : 1045  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1145  
Tolerance 1/min : ± 15

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1350

rack travel mm : 4.00

---

LOW IDLE

control lever  
position degree : 64.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 100  
CRT mm min. : > 6.70

Testing:

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 410  
Tolerance 1/min : ± 20

Rated speed rpm : 470

---

TORQUE CONTROL

Rated speed rpm : 1000  
rack travel mm : 11.30  
Tolerance mm : ± 0.05

Rated speed rpm : 550  
rack travel mm : 11.30  
Tolerance mm : ± 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 900  
rack travel mm : 11.20  
Tolerance mm : ± 0.05

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 10.20  
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 500

H07

Pressure hPa : 320  
rack travel mm : 10.65  
Tolerance mm : ± 0.05

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 900  
Rated speed rpm : 550  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 190.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 162.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

STARTING FUEL DELIVERY

ESS test: With 24 V solenoid activated,  
rack must reach start position in max.  
control lever setting.

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 240.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 24.0

---

LOW IDLE

Rated speed rpm : 300  
Rack travel in mm : 5.20  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 22.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 7.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.01.97  
Test oil : ISO 4113  
  
Combination No. : 0 402 646 649  
  
Injection pump  
Pump designation : PE6P130A72ORS7339  
EP type number : 0 412 636 833  
  
Governor  
Governor design. : RQV300...950PA905-1  
Governor no. : 0 421 814 097

Cust. part No. :

Customer-spec. information  
Customer : IVECO-AIFO  
Motor : 8210.SRI  
Power kW : 353.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0  
  
Overflow valve : 1 417 413 025  
  
Inlet press. bar : 1.5  
Tolerance bar : + 0.1  
  
Test nozzle holde  
assembly : 1 688 901 105  
  
Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5  
  
Test lines : 1 680 750 075  
  
Outside diameter : 8.0

H09

x inside diameter : 3.0  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0  
  
Prestroke mm : 5.05  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10  
  
Rack travel in mm : 14.00  
Tolerance mm : + 0.50  
  
Firing order : 1- 5- 3- 6- 2-  
: 4  
  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75  
  
Start of delivery mark  
  
Check  
tolerance °NW : + 0.40  
  
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 950  
  
Rack travel in mm : 13.95  
Tolerance mm : + 0.05  
  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 338.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Rated speed rpm : 300

Rack travel in mm : 4.70  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 24.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 7.0

Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1000  
guide sleeve  
travel mm : 7.75  
Tolerance mm : ± 0.15

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.81  
Tolerance mm : ± 0.20

Rated speed rpm : 409  
guide sleeve  
travel mm : 2.86  
Tolerance mm : ± 0.25

Rated speed rpm : 459  
guide sleeve  
travel mm : 3.29  
Tolerance mm : ± 0.25

Rated speed rpm : 720  
guide sleeve  
travel mm : 4.94  
Tolerance mm : ± 0.25

Rated speed rpm : 1260  
guide sleeve  
travel mm : 11.50  
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1090

Rack travel in mm : 12.90  
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 950  
Aneroid pressure  
hPa : 1000

Del. quantity  
cm<sup>3</sup>/1000 strokes : 338.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

CONTROL LEVER

control lever  
position degree : 114.0  
tolerance degree : ± 4.0

RATED SPEED  
rack travel mm : 12.90  
Rated speed rpm : 995  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1115  
Tolerance 1/min : ± 15

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1200

rack travel mm : 4.00

---

LOW IDLE

control lever  
position degree : 65.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 200  
CRT mm min. : > 6.20

Testing:

Rated speed rpm : 300  
rack travel mm : 4.70  
Tolerance mm : ± 0.10

Rated speed rpm : 430

---

TORQUE CONTROL

Rated speed rpm : 950  
rack travel mm : 13.95  
Tolerance mm : ± 0.05

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1000  
rack travel mm : 13.95  
Tolerance mm : ± 0.05

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 10.40  
Tolerance mm : ± 0.15

MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 350  
rack travel mm : 10.75  
Tolerance mm : ± 0.10

Pressure hPa : 520  
rack travel mm : 12.95  
Tolerance mm : ± 0.05

---

Start interlock

H11

Rated speed rpm : > 100

Check  
speed 1/min : > 80

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 196.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

STARTING FUEL DELIVERY

ESS test: With 24 V solenoid activated,  
rack must reach start position in max.  
control lever setting.

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 150.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 24.0

---

LOW IDLE

Rated speed rpm : 300  
Rack travel in mm : 4.70  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 24.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 7.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

End of test specification sheet





BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 23.03.98  
Test oil : ISO 4113  
  
Combination No. : 0 402 646 670  
  
Injection pump  
Pump designation : PE6P120A320RS7438  
EP type number : 0 412 626 965  
  
Governor  
Governor design. : RQV275...1150PA1296K  
Governor no. : 0 421 815 523  
  
Cust. part No. : 1316183

Customer spec. information  
Customer : DAF  
Motor : PF 235 M  
Power kW : 230.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0  
  
Overflow valve : 1 417 413 000  
  
Inlet press. bar : 1.5  
Tolerance bar : + 0.1  
  
Overflow quantity  
min. L/h : 150  
Tolerance L/h : + 20.0  
  
Test nozzle holde  
assembly : 1 688 901 105  
  
Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

H13

Test Lines : 1 680 750 089  
Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0  
  
Prestroke mm : 4.85  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10  
  
Rack travel in mm : 10.50  
Tolerance mm : + 1.50  
  
Firing order : 1- 5- 3- 6- 2-  
: 4  
  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75  
  
Start of delivery mark  
Tolerance : + 0.10  
Check  
tolerance °NW : + 0.75  
  
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 850  
  
Rack travel in mm : 13.50  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 259.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 5.00  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1201  
guide sleeve  
travel mm : 10.07  
Tolerance mm : ± 0.15

Rated speed rpm : 275  
guide sleeve  
travel mm : 1.71  
Tolerance mm : ± 0.20

Rated speed rpm : 811  
guide sleeve  
travel mm : 6.79  
Tolerance mm : ± 0.25

Rated speed rpm : 450

guide sleeve  
travel mm : 3.85  
Tolerance mm : ± 0.25

Rated speed rpm : 1480  
guide sleeve  
travel mm : 13.50  
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1321

Rack travel in mm : 12.25  
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850  
Aneroid pressure  
hPa : 1500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 259.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
position degree : 119.0  
tolerance degree : ± 4.0

RATED SPEED  
rack travel mm : 12.20  
Rated speed rpm : 1185  
Tolerance 1/min : ± 5  
Check  
speed 1/min : ± 10

rack travel mm : 4.00  
Rated speed rpm : 1310  
Tolerance 1/min : ± 15  
Check  
speed 1/min : ± 20

rack travel mm : 0.70

Tolerance mm : ± 0.70  
Rated speed rpm : 1450

---

LOW IDLE

control lever  
position degree : 70.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 175  
CRT mm min. : > 7.60

Testing:

Rated speed rpm : 275  
rack travel mm : 5.00  
Tolerance mm : ± 0.10

Rated speed rpm : 395

---

TORQUE CONTROL

Rated speed rpm : 850  
rack travel mm : 13.50  
Tolerance mm : ± 0.05

Rated speed rpm : 1130  
rack travel mm : 13.20  
Tolerance mm : ± 0.10

Rated speed rpm : 1000  
rack travel mm : 13.35  
Tolerance mm : ± 0.10

Rated speed rpm : 800  
rack travel mm : 13.45  
Tolerance mm : ± 0.10

Rated speed rpm : 650  
rack travel mm : 12.70  
Tolerance mm : ± 0.10

Rated speed rpm : 500  
rack travel mm : 11.90  
Tolerance mm : ± 0.10

Rated speed rpm : 1150  
rack travel mm : 13.20  
Tolerance mm : ± 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 875  
Pressure hPa : 1500  
rack travel mm : 13.50  
Tolerance mm : ± 0.10

Rated speed rpm : 875  
Pressure hPa : -  
rack travel mm : 9.15  
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 875  
Pressure hPa : 450  
rack travel mm : 12.10  
Tolerance mm : ± 0.05

Pressure hPa : 150  
rack travel mm : 9.80  
Tolerance mm : ± 0.10

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 1130  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 232.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

rack travel mm : 13.35  
Tolerance mm : ± 0.10

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 170.0

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

LOW IDLE

Rated speed rpm : 275  
Rack travel in mm : 5.00  
Tolerance mm : +- 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 23.03.98  
Test oil : ISO 4113  
Combination No. : 0 402 646 681  
Injection pump  
Pump designation : PE6P120A320RS7412  
EP type number : 0 412 626 953  
Governor  
Governor design. : RQV275...1000PA1381K  
Governor no. : 0 421 815 561

Cust. part No. : 1349846/D

## Customer-spec. information

Customer : DAF  
Motor : XF 250  
Power Kw : 250.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 417 413 000  
Inlet press. bar : 2.5  
Tolerance bar : ± 0.1  
Test nozzle holder  
assembly : 1 688 901 105  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 089  
Outside diameter : 8.0

H17

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Prestroke mm : 4.45  
Tolerance mm : ± 0.05  
Rack travel in mm : 11.50  
Tolerance mm : ± 0.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
Start of delivery mark  
Tolerance : ± 0.10  
Check  
tolerance °NW : ± 0.70  
Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 980  
Rack travel in mm : 11.50  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 250.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 13.0

Rated speed rpm : 275

Rack travel in mm : 3.90  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 17.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1055  
guide sleeve  
travel mm : 7.47  
Tolerance mm : ± 0.15

Rated speed rpm : 275  
guide sleeve  
travel mm : 2.04  
Tolerance mm : ± 0.20

Rated speed rpm : 820  
guide sleeve  
travel mm : 5.14  
Tolerance mm : ± 0.25

Rated speed rpm : 480  
guide sleeve  
travel mm : 3.34  
Tolerance mm : ± 0.25

Rated speed rpm : 1282  
guide sleeve  
travel mm : 12.00  
Tolerance mm : ± 0.25

Rated speed rpm : 1370  
guide sleeve  
travel mm : 13.50  
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1263

Rack travel in mm : 10.50  
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 980  
Aneroid pressure  
hPa : 1500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 250.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 13.0

CONTROL LEVER

control lever  
position degree : 110.0  
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 10.50  
Rated speed rpm : 1045

Tolerance 1/min : ± 5

Check  
speed 1/min : ± 10

rack travel mm : 4.00  
Rated speed rpm : 1130

Tolerance 1/min : ± 15

Check  
speed 1/min : ± 20

rack travel mm : 0.70  
Tolerance mm : ± 0.70

Rated speed rpm : 1275

---

LOW IDLE

control lever  
position degree : 74.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 175  
CRT mm min. : > 7.00

Testing:

Rated speed rpm : 275  
rack travel mm : 3.90  
Tolerance mm : ± 0.10

Rated speed rpm : 300

---

TORQUE CONTROL

Rated speed rpm : 980  
rack travel mm : 11.50  
Tolerance mm : ± 0.10

Rated speed rpm : 900  
rack travel mm : 11.70  
Tolerance mm : ± 0.10

Rated speed rpm : 750  
rack travel mm : 12.00  
Tolerance mm : ± 0.05

Rated speed rpm : 700  
rack travel mm : 12.00  
Tolerance mm : ± 0.10

Rated speed rpm : 600  
rack travel mm : 11.50  
Tolerance mm : ± 0.10

Rated speed rpm : 500  
rack travel mm : 11.00  
Tolerance mm : ± 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 775  
Pressure hPa : 1500

rack travel mm : 12.00  
Tolerance mm : ± 0.10

Rated speed rpm : 775  
Pressure hPa : 460  
rack travel mm : 11.00  
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 775  
Pressure hPa : -  
rack travel mm : 8.30  
Tolerance mm : ± 0.20

Pressure hPa : 250  
rack travel mm : 9.30  
Tolerance mm : ± 0.10

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 750  
rack travel mm : 12.00  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 289.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 15.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 188.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 15.0

---

LOW IDLE

Rated speed rpm : 275  
Rack travel in mm : 3.90  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 17.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 04.12.92  
Test oil : ISO 4113  
Combination No. : 0 402 648 854  
Injection pump  
Pump designation : PE8P130A920/5LS7822.  
EP type number : 0 412 638 802  
Governor  
Governor design. : RQV300...950PA905  
Governor no. : 0 421 813 723

Cust. part No. :

Customer-spec. information  
Customer : IVECO-FIAT  
Motor : 8280.42.001

TEST BENCH REQUIREMENTS

Inlet line : 4.2  
Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0  
Overflow valve : 1 417 413 025  
Inlet press. bar : 1.5  
Tolerance bar : + 0.1  
Test nozzle holder  
assembly : 1 688 901 105  
Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5  
Test lines : 1 688 750 075  
Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0  
Prestroke mm : 5.15  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10  
Rack travel in mm : 10.50  
Tolerance mm : + 1.50  
Firing order : 1- 8- 4- 3- 6  
                  : - 5- 7- 2  
Phasing : 0-45-90-135-180  
          : -225-270-315  
Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75  
Start of delivery mark  
Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75  
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 550  
Rack travel in mm : 11.45  
Tolerance mm : + 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 222.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000s. : + 4.0

Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

Rated speed rpm : 300

Rack travel in mm : 5.00  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 27.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000s. : + 7.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000s. : 10.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 950  
guide sleeve  
travel mm : 7.30  
Tolerance mm : + 0.10

Rated speed rpm : 225  
guide sleeve  
travel mm : 0.85  
Tolerance mm : + 0.25

Rated speed rpm : 600  
guide sleeve  
travel mm : 4.10  
Tolerance mm : + 0.30

Rated speed rpm : 350  
guide sleeve  
travel mm : 2.30  
Tolerance mm : + 0.20

Rated speed rpm : 1200

H22

guide sleeve  
travel mm : 11.50  
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1020

Rack travel in mm : 16.50  
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 900

Del. quantity  
cm<sup>3</sup>/1000 strokes : 222.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000s. : + 4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

CONTROL LEVER

control lever  
position degree : 113.0  
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.40  
Rated speed rpm : 1000  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1095  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1200

rack travel mm : 4.00

LOW IDLE

control lever  
position degree : 67.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 200  
CRT mm min. : > 6.50

Testing:

Rated speed rpm : 300  
rack travel mm : 5.00  
Tolerance mm : ± 0.10  
  
Rated speed rpm : 430

---

TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 11.45  
Tolerance mm : ± 0.05

Rated speed rpm : 950  
rack travel mm : 11.40  
Tolerance mm : ± 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 900  
rack travel mm : 11.45  
Tolerance mm : ± 0.05

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 9.45  
Tolerance mm : ± 0.15

MEASUREMENT

Rated speed rpm : 500  
  
Pressure hPa : 330  
rack travel mm : 9.90  
Tolerance mm : ± 0.10  
  
Pressure hPa : 390  
rack travel mm : 10.95  
Tolerance mm : ± 0.05

---

Start interlock

H23

Rated speed rpm : > 100

Check  
speed 1/min : > 80

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 900  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 218.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 162.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 240.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 24.0

---

LOW IDLE

Rated speed rpm : 300  
  
Rack travel in mm : 5.00  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 27.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 7.0  
Spreed

Tolerance  
cm3/1000 strokes : 6.0  
Check tolerance  
cm3/1000s. : 10.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 06.08.93  
Test oil : ISO 4113  
Combination No. : 0 402 648 912  
Injection pump  
Pump designation : PE8P130A920/5LS7841.  
EP type number : 0 412 638 803  
Governor  
Governor design. : RQV300...950PA994K  
Governor no. : 0 421 815 275

Cust. part No. :

Customer-spec. information  
Customer : IVECO-FIAT  
Motor : 8280.42.050

TEST BENCH REQUIREMENTS

Inlet line : 4.1  
Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0  
Overflow valve : 1 417 413 025  
Inlet press. bar : 1.5  
Tolerance bar : + 0.1  
Test nozzle holde  
assembly : 1 688 901 105  
Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5  
Test lines : 1 680 750 075  
Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0  
Prestroke mm : 5.05  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10  
Rack travel in mm : 12.00  
Tolerance mm : + 0.50  
Firing order : 1- 8- 4- 3- 6  
                  : - 5- 7- 2  
Phasing : 0-45-90-135-180  
          : -225-270-315  
Tolerance : + 0.50  
Check  
tolerance \*NW : + 0.75  
Start of delivery mark  
Tolerance : + 0.50  
Check  
tolerance \*NW : + 0.75  
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 10.55  
 Tolerance mm : + 0.05

---

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 215.0

---

Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0

---

Spreed

---

Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

---

Rated speed rpm : 300

Rack travel in mm : 4.20  
 Tolerance mm : + 0.10

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 25.0

Tolerance  
 cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
 cm<sup>3</sup>/1000S. : + 6.0

Spreed

Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 700  
 guide sleeve  
 travel mm : 6.20  
 Tolerance mm : + 0.30

Rated speed rpm : 995  
 guide sleeve  
 travel mm : 9.70  
 Tolerance mm : + 0.15

Rated speed rpm : 500  
 guide sleeve  
 travel mm : 4.40  
 Tolerance mm : + 0.30

Rated speed rpm : 300  
 guide sleeve  
 travel mm : 2.60  
 Tolerance mm : + 0.20

Rated speed rpm : 1250  
 guide sleeve  
 travel mm : 13.50  
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1080

Rack travel in mm : 9.40  
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
 Aneroid pressure  
 hPa : 900

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 215.0

Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0

Spreed

Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

CONTROL LEVER

control lever  
 position degree : 112.0  
 tolerance degree : + 4.0

RATED SPEED  
 rack travel mm : 9.40  
 Rated speed rpm : 995  
 Tolerance 1/min : + 5

rack travel mm : 4.00  
 Rated speed rpm : 1050  
 Tolerance 1/min : + 15

rack travel mm : 0.50  
 Tolerance mm : + 0.50  
 Rated speed rpm : 1200

rack travel mm : 4.00

---

LOW IDLE

control lever  
position degree : 62.0  
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm mini. : > 5.70

Testing:

Rated speed rpm : 300  
rack travel mm : 4.20  
Tolerance mm : + 0.10

Rated speed rpm : 230

---

TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 10.55  
Tolerance mm : + 0.05

Rated speed rpm : 950  
rack travel mm : 10.50  
Tolerance mm : + 0.10

Rated speed rpm : 700  
rack travel mm : 10.55  
Tolerance mm : + 0.15

Rated speed rpm : 350  
rack travel mm : 10.15  
Tolerance mm : + 0.15

Rated speed rpm : 550  
rack travel mm : 8.00  
Tolerance mm : + 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 950  
Pressure hPa : 900  
rack travel mm : 10.55  
Tolerance mm : + 0.05

H27

Rated speed rpm : 950  
Pressure hPa : -  
rack travel mm : 7.40  
Tolerance mm : + 0.10

MEASUREMENT

Rated speed rpm : 950

Pressure hPa : 260  
rack travel mm : 8.20  
Tolerance mm : + 0.10

Pressure hPa : 360  
rack travel mm : 9.75  
Tolerance mm : + 0.05

---

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 220

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 240

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 900  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 217.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

---

rack travel mm : 10.55  
Tolerance mm : + 0.15

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 550  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 150.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 8.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0

Check tolerance  
cm<sup>3</sup>/1000S. : 14.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 140.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 165.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 19.0

---

#### LOW IDLE

Rated speed rpm : 300  
Rack travel in mm : 4.20  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 25.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 10.09.93  
Test oil : ISO 4113  
Combination No. : 0 402 648 958  
Injection pump  
Pump designation : PE8P120A320LS7863  
EP type number : 0 412 628 874  
Governor  
Governor design. : RQV300...1050PA1056  
                  : -?K  
Governor no. : 0 421 815 341  
Cust. part No. : 0240743302

---

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM442 LA  
Power KW : 370.0

---

TEST BENCH REQUIREMENTS

Inlet line : 3.1  
Test oil inlet temp. °C : 40  
Tolerance °C : + 2.0  
Overflow valve : 1 417 413 025  
Inlet press. bar : 1.5  
Tolerance bar : + 0.1  
Overflow quantity min. L/h : 105  
Tolerance L/h : + 10.0  
Test nozzle holder assembly : 1 688 901 105  
Opening pressure bar : 208.5  
Tolerance bar : + 1.5

JD1

Test lines : 1 680 750 075  
Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 1000

---

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0  
Prestroke mm : 5.05  
Tolerance mm : + 0.05  
Check tolerance mm : + 0.10  
Rack travel in mm : 14.00  
Tolerance mm : + 0.50  
Firing order : 8- 7- 2- 6- 3  
                  : - 5- 4- 1  
Phasing : 0-45-90-135-180  
          : -225-270-315  
Tolerance : + 0.50  
Check tolerance \*NW : + 0.75  
Start of delivery mark  
Tolerance : + 0.50  
Check tolerance \*NW : + 0.75  
Barrel no. : 8

---

BASIC SETTING

Rated speed rpm : 1050

---

Rack travel in mm : 14.05  
Tolerance mm : + 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 258.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Spread

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 300

Rack travel in mm : 5.80  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1106

guide sleeve  
travel mm : 8.96  
Tolerance mm : + 0.10

Rated speed rpm : 300

guide sleeve  
travel mm : 1.85  
Tolerance mm : + 0.10

Rated speed rpm : 850

guide sleeve  
travel mm : 5.60  
Tolerance mm : + 0.25

Rated speed rpm : 347

guide sleeve  
travel mm : 2.72  
Tolerance mm : + 0.25

Rated speed rpm : 397

guide sleeve  
travel mm : 3.26  
Tolerance mm : + 0.25

Rated speed rpm : 530

guide sleeve  
travel mm : 3.77  
Tolerance mm : + 0.25

Rated speed rpm : 1219

guide sleeve  
travel mm : 12.00  
Tolerance mm : + 0.25

Rated speed rpm : 1300

guide sleeve  
travel mm : 13.50  
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1180

Rack travel in mm : 13.00  
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050

Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 253.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

CONTROL LEVER

control lever  
position degree : 119.0  
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 13.00  
Rated speed rpm : 1095  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1170  
Tolerance 1/min : ± 15

rack travel mm : 0.75  
Tolerance mm : ± 0.75  
Rated speed rpm : 1300

---

LOW IDLE

control lever  
position degree : 75.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 7.70

Testing:

Rated speed rpm : 300  
rack travel mm : 5.80  
Tolerance mm : ± 0.10

Rated speed rpm : 400

---

TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 14.05  
Tolerance mm : ± 0.05

Rated speed rpm : 950  
rack travel mm : 14.45  
Tolerance mm : ± 0.10

Rated speed rpm : 850  
rack travel mm : 14.60  
Tolerance mm : ± 0.10

Rated speed rpm : 750

rack travel mm : 14.20  
Tolerance mm : ± 0.05

Rated speed rpm : 700  
rack travel mm : 13.90  
Tolerance mm : ± 0.10

Rated speed rpm : 650  
rack travel mm : 13.70  
Tolerance mm : ± 0.10

Rated speed rpm : 550  
rack travel mm : 13.50  
Tolerance mm : ± 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 850  
Pressure hPa : 1200  
rack travel mm : 14.70  
Tolerance mm : ± 0.10

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 7.95  
Tolerance mm : ± 0.15

MEASUREMENT

Rated speed rpm : 850  
Pressure hPa : 150  
rack travel mm : 8.90  
Tolerance mm : ± 0.10

Pressure hPa : 550  
rack travel mm : 12.40  
Tolerance mm : ± 0.05

---

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 220

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 240

---

FUEL DELIVERY CHARACTERISTICS

rack travel mm : 14.60

Tolerance mm : ± 0.10

---

Aneroid pressure

hPa : -  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 262.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

Aneroid pressure

hPa : -  
Rated speed rpm : 550  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 256.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

Aneroid pressure

hPa : -  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 204.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

---

Aneroid pressure

hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 133.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 11.60  
Tolerance mm : ± 0.40  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 130.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 14.0

---

LOW IDLE

Rated speed rpm : 300  
Rack travel in mm : 5.80  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 29.09.94  
Test oil : ISO 4113  
Combination No. : 0 402 735 816  
Injection pump  
Pump designation : PES5P120A720/3LS7310  
: -1  
EP type number : 0 412 725 820  
Governor  
Governor design. : RQ325/1000PA1106-1  
Governor no. : 0 421 801 700  
Cust. part No. : 51.11103-7391

Customer-spec. information  
Customer : MAN  
Motor : D2865LUH06  
Power kW : 191.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 417 413 025  
Inlet press. bar : 1.5  
Tolerance bar : ± 0.1  
Tolerance l/h : ± 20.0  
Test nozzle holder  
assembly : 1 688 901 105  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test Lines : 1 680 750 089  
Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.15  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 12.80  
Tolerance mm : ± 0.50

Firing order : 1- 3- 5- 4- 2

Phasing : 0-72-144-216-288  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 5

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 10.80

Tolerance mm : + 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 235.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Speed

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 325

Rack travel in mm : 4.90  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 43.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1071  
guide sleeve  
travel mm : 7.35  
Tolerance mm : + 0.10

Rated speed rpm : 325  
guide sleeve  
travel mm : 2.50  
Tolerance mm : + 0.10

Rated speed rpm : 1000  
guide sleeve  
travel mm : 7.01  
Tolerance mm : + 0.10

Rated speed rpm : 777

guide sleeve  
travel mm : 7.01  
Tolerance mm : + 0.10

Rated speed rpm : 408  
guide sleeve  
travel mm : 4.50  
Tolerance mm : + 0.10

Rated speed rpm : 530  
guide sleeve  
travel mm : 7.00  
Tolerance mm : + 0.10

Rated speed rpm : 1220  
guide sleeve  
travel mm : 11.50  
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever  
position degree : 109  
Rated speed rpm : 700

Rack travel in mm : 15.50  
Tolerance mm : + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 750

Del. quantity  
cm<sup>3</sup>/1000 strokes : 235.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
position degree : 100.0  
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.10  
Rated speed rpm : 1053  
Tolerance 1/min : + 8

rack travel mm : 4.00  
Rated speed rpm : 1130  
Tolerance 1/min : ± 15

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1250

---

LOW IDLE

control lever  
position degree : 75.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 200  
CRT mm min. : > 8.00

Testing:

Rated speed rpm : 325  
rack travel mm : 4.90  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 390  
Tolerance 1/min : ± 20

---

TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 10.80  
Tolerance mm : ± 0.05

Rated speed rpm : 750  
rack travel mm : 12.20  
Tolerance mm : ± 0.10

Rated speed rpm : 1000  
rack travel mm : 12.20  
Tolerance mm : ± 0.10

Rated speed rpm : 1000  
rack travel mm : 12.60  
Tolerance mm : ± 0.15

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 750  
rack travel mm : 10.80  
Tolerance mm : ± 0.05

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 8.50  
Tolerance mm : ± 0.10

2-stage LDA setting

Rated speed rpm : 500  
Pressure hPa : 1000  
rack travel mm : 11.05

MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 250  
rack travel mm : 8.75  
Tolerance mm : ± 0.05

Pressure hPa : 500  
rack travel mm : 10.05  
Tolerance mm : ± 0.15

Pressure hPa : 1250  
rack travel mm : 11.65  
Tolerance mm : ± 0.15

Pressure hPa : 2000  
rack travel mm : 12.10  
Tolerance mm : ± 0.05

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 2000  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 264.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0

---

Aneroid pressure  
hPa : 2000  
Rated speed rpm : 1000  
rack travel mm : 12.20  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 244.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 6.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 159.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 8.50  
Tolerance mm : + 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 75.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 10.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 14.0

---

#### LOW IDLE

Rated speed rpm : 325  
Rack travel in mm : 4.90  
Tolerance mm : + 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 43.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

---

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 18.08.97  
Test oil : ISO 4113  
Combination No. : 0 402 736 810

Injection pump  
Pump designation : PES6P110A120RS7213  
EP type number : 0 412 716 804

Governor  
Governor design. : RQV400...1250PA964  
: -2K  
Governor no. : 0 421 815 254

Cust. part No. : 3921777

Customer-spec. information  
Customer : CDC  
Motor : 6BTA-A  
Power KW : 141.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 1.5

Overflow quantity min. l/h : 120  
Tolerance l/h : ± 5.0

Test nozzle holder assembly : 1 688 901 101

Opening pressure bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant. per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.40  
Tolerance mm : ± 0.05  
Check tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check tolerance °NW : ± 0.75

Start of delivery blocking

\*NW after s.o.d. : 6.00  
Tolerance : ± 0.50  
Check tolerance °NW : ± 0.75

Barrel no. : 1

---

**BASIC SETTING**Rated speed rpm : 1250

---

Rack travel in mm : 14.85  
Tolerance mm :  $\pm$  0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 163.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

**Spread**

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 400

Rack travel in mm : 5.50  
Tolerance mm :  $\pm$  0.10Del. quantity  
cm<sup>3</sup>/1000 strokes : 36.0Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0**Spread**Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

**(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR**

---

**GUIDE SLEEVE TRAVEL**Rated speed rpm : 1300  
guide sleeve  
travel mm : 7.30  
Tolerance mm :  $\pm$  0.10Rated speed rpm : 325  
guide sleeve  
travel mm : 0.90Tolerance mm :  $\pm$  0.20Rated speed rpm : 600  
guide sleeve  
travel mm : 3.10  
Tolerance mm :  $\pm$  0.20Rated speed rpm : 400  
guide sleeve  
travel mm : 1.50  
Tolerance mm :  $\pm$  0.10Rated speed rpm : 1500  
guide sleeve  
travel mm : 9.30  
Tolerance mm :  $\pm$  0.20

---

**GUIDE SLEEVE POSITION**

Rated speed rpm : 1450

Rack travel in mm : 13.80  
Tolerance mm :  $\pm$  1.30

---

**FULL LOAD DELIVERY AT FULL LOAD STOP**Rated speed rpm : 1250  
Aneroid pressure  
kPa : 1200Del. quantity  
cm<sup>3</sup>/1000 strokes : 163.0Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0**Spread**Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

**CONTROL LEVER**control lever  
position degree : 63.0  
tolerance degree :  $\pm$  4.0control lever  
position degree : 119.0  
tolerance degree :  $\pm$  4.0**RATED SPEED**rack travel mm : 13.80  
Rated speed rpm : 1300  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1475  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1600

---

#### LOW IDLE

control lever  
position degree : 71.0  
tolerance degree : + 4.0

control lever  
position degree : 15.0  
tolerance degree : + 4.0

#### Setting point w/out bumper spring

Rated speed rpm : 275

CRT mm min. : > 7.20

#### Testing:

Rated speed rpm : 400  
rack travel mm : 5.50  
Tolerance mm : + 0.10

Rated speed rpm : 423

---

#### TORQUE CONTROL

Rated speed rpm : 1250  
rack travel mm : 14.85  
Tolerance mm : + 0.05

Rated speed rpm : 800  
rack travel mm : 13.10  
Tolerance mm : + 0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 1250  
Pressure hPa : 1200  
rack travel mm : 14.85  
Tolerance mm : + 0.05

Rated speed rpm : 1250  
Pressure hPa : -

rack travel mm : 8.50  
Tolerance mm : + 0.20

#### MEASUREMENT

Rated speed rpm : 1250

Pressure hPa : 690  
rack travel mm : 13.40  
Tolerance mm : + 0.20

Pressure hPa : 365  
rack travel mm : 10.25  
Tolerance mm : + 0.05

---

#### Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 290

Check  
speed 1/min : > 80

Check  
speed 1/min : < 300

---

#### FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 161.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 97.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 12.50  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 155.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  25.0

---

LOW IDLE

Rated speed rpm : 400  
Rack travel in mm : 5.50  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 36.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 19.03.98  
Test oil : ISO 4113

Combination No. : 0 402 736 862AA

Injection pump  
Pump designation : PES6P110A120RS7214  
EP type number : 0 412 716 805

Governor  
Governor design. : RQV350...1200PA964  
: -30K  
Governor no. : 0 421 815 432

Cust. part No. : 3282470

---

Customer-spec. information  
Customer : CUMMINS  
Motor : 6CTA-A  
Power KW : 213.0

---

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Overflow quantity  
min. l/h : 120  
Tolerance l/h : ± 5.0

Test nozzle holder  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

---

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

## BEGINNING OF DELIVERY

Test pressure bar : 23.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.40  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance \*NW : ± 0.75

## Start of delivery blocking

\*NW after s.o.d. : 6.00  
Tolerance : ± 0.10  
Check  
tolerance \*NW : ± 0.75

Barrel no. : 1

---

## BASIC SETTING

Rated speed rpm : 900

---

Rack travel in mm : 13.90  
 Tolerance mm : +- 0.05

---

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 186.0

---

Tolerance  
 cm<sup>3</sup>/1000 strokes : +- 1.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : +- 4.0

---

Spread

---

Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 300

Rack travel in mm : 6.50  
 Tolerance mm : +- 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 43.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : +- 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : +- 5.0

Spread

Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1269  
 guide sleeve  
 travel mm : 9.75  
 Tolerance mm : +- 0.25

Rated speed rpm : 300  
 guide sleeve  
 travel mm : 1.76  
 Tolerance mm : +- 0.25

Rated speed rpm : 829  
 guide sleeve  
 travel mm : 6.79  
 Tolerance mm : +- 0.25

Rated speed rpm : 322  
 guide sleeve  
 travel mm : 1.98  
 Tolerance mm : +- 0.25

Rated speed rpm : 372  
 guide sleeve  
 travel mm : 2.75  
 Tolerance mm : +- 0.25

Rated speed rpm : 460  
 guide sleeve  
 travel mm : 3.76  
 Tolerance mm : +- 0.25

Rated speed rpm : 1630  
 guide sleeve  
 travel mm : 13.50  
 Tolerance mm : +- 0.50

GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1400

Rack travel in mm : 12.90  
 Tolerance mm : +- 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900  
 Aneroid pressure  
 hPa : 1000  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 186.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : +- 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : +- 4.0

Spread

Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
 position degree : 60.0  
 tolerance degree : +- 4.0

control lever  
 position degree : 112.0

tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 13.65  
Rated speed rpm : 1150  
Tolerance 1/min : +- 5

rack travel mm : 4.00  
Rated speed rpm : 1360  
Tolerance 1/min : +- 15

rack travel mm : 0.50  
Tolerance mm : +- 0.50  
Rated speed rpm : 1500

LOW IDLE

control lever  
position degree : 66.0  
tolerance degree : +- 4.0

control lever  
position degree : 14.0  
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 7.65

Testing:

Rated speed rpm : 300  
rack travel mm : 6.50  
Tolerance mm : +- 0.10

Rated speed rpm : 423

TORQUE CONTROL

Rated speed rpm : 900  
rack travel mm : 13.90  
Tolerance mm : +- 0.05

Rated speed rpm : 700  
rack travel mm : 12.90  
Tolerance mm : +- 0.35

Rated speed rpm : 1100  
rack travel mm : 14.60  
Tolerance mm : +- 0.10

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 1100  
Pressure hPa : 1200  
rack travel mm : 14.60  
Tolerance mm : +- 0.05

Rated speed rpm : 1100  
Pressure hPa : -  
rack travel mm : 8.50  
Tolerance mm : +- 0.20

MEASUREMENT

Rated speed rpm : 1100

Pressure hPa : 675  
rack travel mm : 14.30  
Tolerance mm : +- 0.20

Pressure hPa : 340  
rack travel mm : 10.40  
Tolerance mm : +- 0.05

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 220

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 180.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 1100  
rack travel mm : 14.60  
Tolerance mm : + 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 185.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 104.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

#### STARTING FUEL DELIVERY

Set starting CRT at K-cam.

Rated speed rpm : 100  
rack travel mm : 11.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 155.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 25.0

---

#### LOW IDLE

Rated speed rpm : 300  
Rack travel in mm : 6.50  
Tolerance mm : + 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 43.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 19.03.98  
Test oil : ISO 4113  
Combination No. : 0 402 736 888  
Injection pump  
Pump designation : PES6P120A12ORS7390  
EP type number : 0 412 726 945  
Governor  
Governor design. : RQV350...1100PA1237K  
Governor no. : 0 421 815 475  
Cust. part No. : 3283278

Customer-spec. information  
Customer : CUMMINS  
Motor : 6CTAA  
Power KW : 162.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2  
Test oil inlet temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 2 417 413 093  
Inlet press. bar : 1.5  
Overflow quantity min. l/h : 110  
Tolerance l/h : ± 20.0  
Test nozzle holder assembly : 1 688 901 101  
Opening pressure bar : 208.5  
Tolerance bar : ± 1.5

Test Lines : 1 680 750 008  
Outside diameter : 6.0  
x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Prestroke mm : 3.30  
Tolerance mm : ± 0.05  
Check tolerance mm : ± 0.10  
Rack travel in mm : 20.50  
Tolerance mm : ± 0.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check tolerance °NW : ± 0.75  
Start of delivery blocking  
°NW after s.o.d. : 7.70  
Tolerance : ± 0.10  
Check tolerance °NW : ± 0.75  
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 13.30  
 Tolerance mm : + 0.05

---

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 164.0

---

Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0

---

Spreed

---

Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 350

Rack travel in mm : 4.80  
 Tolerance mm : + 0.10

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 18.0

Tolerance  
 cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
 cm<sup>3</sup>/1000S. : + 5.0

Spreed

Tolerance  
 cm<sup>3</sup>/1000 strokes : 7.0

Check tolerance  
 cm<sup>3</sup>/1000S. : 11.0

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1159  
 guide sleeve  
 travel mm : 10.27  
 Tolerance mm : + 0.15

Rated speed rpm : 350  
 guide sleeve  
 travel mm : 1.93  
 Tolerance mm : + 0.20

Rated speed rpm : 710  
 guide sleeve  
 travel mm : 5.79  
 Tolerance mm : + 0.25

Rated speed rpm : 420  
 guide sleeve  
 travel mm : 4.28  
 Tolerance mm : + 0.25

Rated speed rpm : 1380  
 guide sleeve  
 travel mm : 13.50  
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1200

Rack travel in mm : 12.30  
 Tolerance mm : + 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
 Aneroid pressure  
 hPa : 1500

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 164.0

Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0

Spreed

Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
 position degree : 69.0  
 tolerance degree : + 4.0

control lever  
 position degree : 123.0  
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.30  
 Rated speed rpm : 1145  
 Tolerance 1/min : + 5

rack travel mm : 4.00  
 Rated speed rpm : 1240  
 Tolerance 1/min : + 15

Check  
 speed 1/min : + 20  
  
 rack travel mm : 0.50  
 Tolerance mm : + 0.50  
 Rated speed rpm : 1350

---

LOW IDLE

control lever  
 position degree : 73.0  
 tolerance degree : + 4.0

control lever  
 position degree : 21.0  
 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 250  
  
 CRT mm min. : > 7.70

Testing:

Rated speed rpm : 350  
 rack travel mm : 4.80  
 Tolerance mm : + 0.10

Rated speed rpm : 350

---

TORQUE CONTROL

Rated speed rpm : 1100  
 rack travel mm : 13.30  
 Tolerance mm : + 0.05

Rated speed rpm : 750  
 rack travel mm : 12.95  
 Tolerance mm : + 0.10

Rated speed rpm : 900  
 rack travel mm : 13.05  
 Tolerance mm : + 0.15

Rated speed rpm : 600  
 rack travel mm : 12.70  
 Tolerance mm : + 0.15

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 1100  
 Pressure hPa : 1500  
 rack travel mm : 13.30  
 Tolerance mm : + 0.05

Rated speed rpm : 1100  
 Pressure hPa : -  
 rack travel mm : 10.60  
 Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 1100

Pressure hPa : 170  
 rack travel mm : 11.80  
 Tolerance mm : + 0.20

Pressure hPa : 330  
 rack travel mm : 12.80  
 Tolerance mm : + 0.05

---

Start interlock

Rated speed rpm : > 100  
 Rated speed rpm : < 280

Check  
 speed 1/min : > 80  
 Check  
 speed 1/min : < 300

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
 hPa : 1500  
 Rated speed rpm : 750  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 155.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 6.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 12.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 16.0

rack travel mm : 13.05  
 Tolerance mm : + 0.15

---

Aneroid pressure  
 hPa : -  
 Rated speed rpm : 500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 107.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm : ± 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 185.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 24.0

---

#### LOW IDLE

Rated speed rpm : 350  
Rack travel in mm : 4.80  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 19.03.98  
Test oil : ISO 4113  
Combination No. : 0 402 736 889AA  
Injection pump  
Pump designation : PES6P120A120RS7390  
EP type number :  
Governor  
Governor design. : RQV350...1100PA1244K  
Governor no. :  
Cust. part No. : 3282739

Customer-spec. information  
Customer : CUMMINS  
Motor : SCTAA  
Power KW : 179.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2  
Test oil inlet temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 2 417 413 093  
Inlet press. bar : 1.5  
Overflow quantity min. L/h : 90  
Tolerance L/h : ± 10.0  
Test nozzle holder assembly : 1 688 901 101  
Opening pressure bar : 208.5  
Tolerance bar : ± 1.5

Test Lines : 1 680 750 008  
Outside diameter : 6.0  
x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Prestroke mm : 3.30  
Tolerance mm : ± 0.05  
Check tolerance mm : ± 0.10  
Rack travel in mm : 20.50  
Tolerance mm : ± 0.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check tolerance °NW : ± 0.75  
Start of delivery blocking  
°NW after s.o.d. : 7.70  
Tolerance : ± 0.10  
Check tolerance °NW : ± 0.75  
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 13.70  
 Tolerance mm : + 0.05

---

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 173.0

---

Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0

---

Speed

---

Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 350

Rack travel in mm : 4.60  
 Tolerance mm : + 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 18.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 5.0  
 Speed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 7.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 11.0

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever  
 position degree : - 1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
 Aneroid pressure  
 hPa : 1500  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 173.0

Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0  
 Speed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

RATED SPEED  
 rack travel mm : 12.70  
 Rated speed rpm : 1145  
 Tolerance 1/min : + 5

Check  
 speed 1/min : + 20

rack travel mm : 0.50  
 Tolerance mm : + 0.50  
 Rated speed rpm : 1350

LOW IDLE

Testing:

Rated speed rpm : 350  
 rack travel mm : 4.60  
 Tolerance mm : + 0.10

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 1100  
 rack travel mm : 13.70  
 Tolerance mm : + 0.05

Rated speed rpm : 700  
 rack travel mm : 13.85  
 Tolerance mm : + 0.10

Rated speed rpm : 500  
 rack travel mm : 12.95  
 Tolerance mm : + 0.15

ANEROID/ALTITUDE  
 COMPENSATOR TEST

SETTING

Rated speed rpm : 700  
 Pressure hPa : 1500  
 rack travel mm : 13.20

Tolerance mm : ± 0.10  
Rated speed rpm : 700  
Pressure hPa : -  
rack travel mm : 10.10  
Tolerance mm : ± 0.20

#### MEASUREMENT

Rated speed rpm : 700  
Pressure hPa : 400  
rack travel mm : 11.10  
Tolerance mm : ± 0.20

Pressure hPa : 600  
rack travel mm : 12.60  
Tolerance mm : ± 0.05

---

#### Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 290

Check speed 1/min : > 80  
Check speed 1/min : < 300

---

#### FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure hPa : 1500  
Rated speed rpm : 700  
Del. quantity cm<sup>3</sup>/1000 strokes : 171.0  
Tolerance cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance cm<sup>3</sup>/1000S. : ± 6.0  
Spreed Tolerance cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance cm<sup>3</sup>/1000S. : 12.0

---

rack travel mm : 12.95  
Tolerance mm : ± 0.15

---

Aneroid pressure hPa : -  
Rated speed rpm : 500  
Del. quantity cm<sup>3</sup>/1000 strokes : 104.5

Tolerance cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance cm<sup>3</sup>/1000S. : ± 4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm : ± 0.50  
Del. quantity cm<sup>3</sup>/1000 strokes : 190.0  
Tolerance cm<sup>3</sup>/1000 strokes : ± 20.0  
Check tolerance cm<sup>3</sup>/1000S. : ± 24.0

---

#### LOW IDLE

Rated speed rpm : 350  
Rack travel in mm : 4.60  
Tolerance mm : ± 0.10  
Del. quantity cm<sup>3</sup>/1000 strokes : 18.0  
Tolerance cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance cm<sup>3</sup>/1000S. : ± 5.0  
Spreed Tolerance cm<sup>3</sup>/1000 strokes : 7.0  
Check tolerance cm<sup>3</sup>/1000S. : 11.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 19.03.98  
Test oil : ISO 4113  
  
Combination No. : 0 402 736 893  
  
Injection pump  
Pump designation : PES6P120A120RS7400  
EP type number : 0 412 726 950  
  
Governor  
Governor design. : RQV350...1100PA1244  
                  : -2K  
Governor no. : 0 421 815 489

Cust. part No. : 3282609

---

Customer-spec. information  
Customer : CUMMINS  
Motor : 6CTAA  
Power kW : 206.0

---

TEST BENCH REQUIREMENTS

Inlet line : 3.2  
  
Test oil inlet temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 2 417 413 093  
  
Inlet press. bar : 1.5  
  
Overflow quantity min. L/h : 125  
Tolerance L/h : ± 20.0  
  
Test nozzle holder assembly : 1 688 901 101  
  
Opening pressure bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008  
Outside diameter : 6.0  
x inside diameter : 2.0  
x length mm : 600

---

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quart.  
per values \_\_\_\_\_

---

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 3.30  
Tolerance mm : ± 0.05  
Check tolerance mm : ± 0.10  
  
Rack travel in mm : 20.50  
Tolerance mm : ± 0.50  
  
Firing order : 1- 5- 3- 6- 2-  
                  : 4  
  
Phasing : 0-60-120-180-240  
          : -300  
Tolerance : ± 0.50  
Check tolerance \*NW : ± 0.75  
  
Start of delivery blocking  
  
\*NW after s.o.d. : 8.00  
Tolerance : ± 0.10  
Check tolerance \*NW : ± 0.75  
  
Barrel no. : 1

---

BASIC SETTING

Rated speed rpm : 1050



---

Rack travel in mm : 15.50  
Tolerance mm : + 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 211.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Speed

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 350

Rack travel in mm : 5.50  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 25.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0

Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

---

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1159  
guide sleeve  
travel mm : 10.28  
Tolerance mm : + 0.15

Rated speed rpm : 350  
guide sleeve  
travel mm : 1.93  
Tolerance mm : + 0.20

Rated speed rpm : 710  
guide sleeve  
travel mm : 5.79

Tolerance mm : + 0.25

Rated speed rpm : 500  
guide sleeve  
travel mm : 4.70  
Tolerance mm : + 0.25

Rated speed rpm : 1380  
guide sleeve  
travel mm : 13.50  
Tolerance mm : + 0.50

---

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1215

Rack travel in mm : 13.30  
Tolerance mm : + 2.00

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
Aneroid pressure  
hPa : 1500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 211.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

CONTROL LEVER

control lever  
position degree : 66.0  
tolerance degree : + 4.0

control lever  
position degree : 122.0  
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 14.50  
Rated speed rpm : 1145  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1260

Tolerance 1/min : +- 15  
Check  
speed 1/min : +- 20  
rack travel mm : 0.50  
Tolerance mm : +- 0.50  
Rated speed rpm : 1350

---

#### LOW IDLE

control lever  
position degree : 73.0  
tolerance degree : +- 4.0  
control lever  
position degree : 20.0  
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 250  
CRT mm min. : > 8.60

Testing:

Rated speed rpm : 350  
rack travel mm : 5.50  
Tolerance mm : +- 0.10

Rated speed rpm : 350

---

#### TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 15.50  
Tolerance mm : +- 0.05

Rated speed rpm : 650  
rack travel mm : 15.00  
Tolerance mm : +- 0.10

Rated speed rpm : 900  
rack travel mm : 15.40  
Tolerance mm : +- 0.15

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 1050  
Pressure hPa : 1500  
rack travel mm : 15.50

Tolerance mm : +- 0.05

Rated speed rpm : 1050  
Pressure hPa : -  
rack travel mm : 11.05  
Tolerance mm : +- 0.20

#### MEASUREMENT

Rated speed rpm : 1050  
Pressure hPa : 820  
rack travel mm : 14.15  
Tolerance mm : +- 0.20

Pressure hPa : 420  
rack travel mm : 12.10  
Tolerance mm : +- 0.05

---

#### Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 280

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 300

---

#### FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 650  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 197.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 12.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 16.0

---

rack travel mm : 15.40  
Tolerance mm : +- 0.15

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 111.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm : + 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 195.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 24.0

---

#### LOW IDLE

Rated speed rpm : 350  
Rack travel in mm : 5.50  
Tolerance mm : + 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 25.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 5.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 19.03.98  
Test oil : ISO 4113

Combination No. : 0 402 736 894

Injection pump  
Pump designation : PES6P12QA12ORS7400  
EP type number : 0 412 726 950

Governor  
Governor design. : RQV350...1200PA1261  
Governor no. : 0 421 815 495

Cust. part No. : 3282766

Customer spec. information  
Customer : CUMMINS  
Motor : 6CTAA  
Power Kw : 191.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 1.5

Overflow quantity  
min. l/h : 125  
Tolerance l/h : ± 20.0

Test nozzle holder  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.30  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Start of delivery blocking

\*NW after s.o.d. : 7.70  
Tolerance : ± 0.10  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 14.65  
 Tolerance mm : + 0.05

---

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 190.0

---

Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0

---

Spreed

---

Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 350

Rack travel in mm : 5.50  
 Tolerance mm : + 0.10

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 25.0

Tolerance  
 cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
 cm<sup>3</sup>/1000S. : + 5.0

Spreed

Tolerance  
 cm<sup>3</sup>/1000 strokes : 7.0

Check tolerance  
 cm<sup>3</sup>/1000S. : 11.0

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1258  
 guide sleeve  
 travel mm : 10.14  
 Tolerance mm : + 0.15

Rated speed rpm : 350  
 guide sleeve  
 travel mm : 1.93  
 Tolerance mm : + 0.20

Rated speed rpm : 766  
 guide sleeve  
 travel mm : 5.91  
 Tolerance mm : + 0.25

K01

Rated speed rpm : 450  
 guide sleeve  
 travel mm : 4.49  
 Tolerance mm : + 0.25

Rated speed rpm : 1520  
 guide sleeve  
 travel mm : 13.50  
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1340

Rack travel in mm : 12.60  
 Tolerance mm : + 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150  
 Aneroid pressure  
 hPa : 1500

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 190.0

Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0

Spreed

Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
 position degree : 66.0  
 tolerance degree : + 4.0

control lever  
 position degree : 120.0  
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 13.60  
 Rated speed rpm : 1245  
 Tolerance 1/min : + 5

rack travel mm : 4.00  
 Rated speed rpm : 1370  
 Tolerance 1/min : + 15

Check  
speed 1/min : + 20  
rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1450

---

#### LOW IDLE

control lever  
position degree : 72.0  
tolerance degree : + 4.0

control lever  
position degree : 18.0  
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 250

CRT mm min. : > 8.60

Testing:

Rated speed rpm : 350  
rack travel mm : 5.50  
Tolerance mm : + 0.10

Rated speed rpm : 350

---

#### TORQUE CONTROL

Rated speed rpm : 1150  
rack travel mm : 14.65  
Tolerance mm : + 0.05

Rated speed rpm : 600  
rack travel mm : 14.10  
Tolerance mm : + 0.10

Rated speed rpm : 750  
rack travel mm : 14.75  
Tolerance mm : + 0.15

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 1150  
Pressure hPa : 1500  
rack travel mm : 14.65  
Tolerance mm : + 0.05

K02

Rated speed rpm : 1150  
Pressure hPa : -  
rack travel mm : 11.10  
Tolerance mm : + 0.20

#### MEASUREMENT

Rated speed rpm : 1150

Pressure hPa : 733  
rack travel mm : 13.90  
Tolerance mm : + 0.20

Pressure hPa : 400  
rack travel mm : 11.90  
Tolerance mm : + 0.05

---

#### Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 280

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 300

---

#### FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 176.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000s. : + 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 12.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 16.0

---

rack travel mm : 14.75  
Tolerance mm : + 0.15

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 111.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm : ± 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 195.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 24.0

---

LOW IDLE

Rated speed rpm : 350  
Rack travel in mm : 5.50  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 25.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 19.03.98  
Test oil : ISO 4113  
  
Combination No. : 0 402 746 654  
  
Injection pump  
Pump designation : PES6P120A32ORS7379  
EP type number : 0 412 726 942  
  
Governor  
Governor design. : RQV250...900PA1224K  
Governor no. : 0 421 815 468

Cust. part No. :

Customer-spec. information  
Customer : PERKINS  
Motor : EAGLE340TX  
Power KW : 250.0

TEST BENCH REQUIREMENTS

Inlet Line : 4.1  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 2 417 413 084  
  
Inlet press. bar : 3.0  
Tolerance bar : ± 0.1  
  
Overflow quantity  
min. l/h : 130  
Tolerance l/h : ± 10.0  
  
Test nozzle holder  
assembly : 1 688 901 101  
  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

K04

Test lines : 1 680 750 008  
Outside diameter : 6.0  
x inside diameter : 2.0  
x Length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 4.90  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
  
Rack travel in mm : 12.00  
Tolerance mm : ± 1.00  
  
Firing order : 1- 4- 2- 6- 3-  
: 5  
  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
  
Start of delivery blocking  
Tolerance : ± 0.10  
Check  
tolerance °NW : ± 0.75  
  
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 850  
  
Rack travel in mm : 13.70  
Tolerance mm : ± 0.05



Del. quantity  
cm<sup>3</sup>/1000 strokes : 232.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 4.80

Tolerance mm : ± 0.10

Del. quantity

cm<sup>3</sup>/1000 strokes : 26.0

Tolerance

cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance

cm<sup>3</sup>/1000S. : ± 6.0

Spread

Tolerance

cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance

cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 958

guide sleeve

travel mm : 8.79

Tolerance mm : ± 0.15

Rated speed rpm : 300

guide sleeve

travel mm : 2.23

Tolerance mm : ± 0.20

Rated speed rpm : 676

guide sleeve

travel mm : 5.80

Tolerance mm : ± 0.25

Rated speed rpm : 430

guide sleeve  
travel mm : 3.62  
Tolerance mm : ± 0.25

Rated speed rpm : 1260

guide sleeve

travel mm : 13.50

Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever

position degree : - 1

Rated speed rpm : 1070

Rack travel in mm : 15.90

Tolerance mm : ± 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850

Aneroid pressure

hPa : 1200

Del. quantity

cm<sup>3</sup>/1000 strokes : 232.0

Tolerance

cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance

cm<sup>3</sup>/1000S. : ± 4.0

Spread

Tolerance

cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance

cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever

position degree : 117.0

tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 12.70

Rated speed rpm : 945

Tolerance 1/min : ± 5

rack travel mm : 4.00

Rated speed rpm : 1065

Tolerance 1/min : ± 15

rack travel mm : 0.50

Tolerance mm : ± 0.50

Rated speed rpm : 1150

---

LOW IDLE

control lever  
position degree : 72.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 200  
CRT mm min. : > 6.30

Testing:

Rated speed rpm : 300  
rack travel mm : 4.80  
Tolerance mm : ± 0.10

Rated speed rpm : 350

---

TORQUE CONTROL

Rated speed rpm : 850  
rack travel mm : 13.70  
Tolerance mm : ± 0.05

Rated speed rpm : 600  
rack travel mm : 13.25  
Tolerance mm : ± 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 850  
Pressure hPa : 1200  
rack travel mm : 13.70  
Tolerance mm : ± 0.05

Rated speed rpm : 850  
Pressure hPa : -  
rack travel mm : 8.85  
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 850  
Pressure hPa : 610  
rack travel mm : 12.20  
Tolerance mm : ± 0.20

Pressure hPa : 350  
rack travel mm : 10.20

K06

Tolerance mm : ± 0.05

---

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 230

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 240

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 255.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 155.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm : ± 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 260.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 25.0

---

LOW IDLE

Rated speed rpm : 300  
Rack travel in mm : 4.80

Tolerance mm : + 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 26.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 19.03.98  
Test oil : ISO 4113  
Combination No. : 0 402 746 844  
Injection pump  
Pump designation : PES6P120A320RS7162  
EP type number : 0 412 726 819

Governor  
Governor design. : RQ750PA836-2  
Governor no. : 0 421 801 628

Cust. part No. :

Customer-spec. information  
Customer : PERKINS  
Motor : 2006 TAG  
Power KW : 280.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1  
Test oil inlet temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 417 413 025  
Inlet press. bar : 1.5  
Test nozzle holder assembly : 1 688 901 019  
Opening pressure bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 067  
Outside diameter : 6.0

K08

x inside diameter : 1.5  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Prestroke mm : 4.55  
Tolerance mm : ± 0.05  
Check tolerance mm : ± 0.10  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
Firing order : 1- 4- 2- 6- 3-  
: 5  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check tolerance °NW : ± 0.75  
Start of delivery mark  
Tolerance : ± 0.10  
Check tolerance °NW : ± 0.75  
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700  
Rack travel in mm : 13.05  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 380.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 300

Del. quantity  
cm<sup>3</sup>/1000 strokes : 41.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 757  
guide sleeve  
travel mm : 1.84  
Tolerance mm : ± 0.25

Rated speed rpm : 930  
guide sleeve  
travel mm : 42.98  
Tolerance mm : ± 0.25

Rated speed rpm : 820  
guide sleeve  
travel mm : 9.41  
Tolerance mm : ± 0.25

Rated speed rpm : 824  
guide sleeve  
travel mm : 10.00  
Tolerance mm : ± 0.25

Rated speed rpm : 880

guide sleeve  
travel mm : 11.50  
Tolerance mm : ± 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 380.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever

position degree : 89.0  
tolerance degree : ± 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 750  
rack travel mm : 12.00

Rated speed rpm : 784  
Tolerance 1/min : ± 4  
rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 820

Rated speed rpm : 751  
rack travel mm : 12.00

Rated speed rpm : 785  
Tolerance 1/min : ± 4  
rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 820

Rated speed rpm : 752  
rack travel mm : 12.00

Rated speed rpm : 786  
Tolerance 1/min : + 4  
rack travel mm : 4.00  
  
rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 820

Rated speed rpm : 753  
rack travel mm : 12.00

Rated speed rpm : 787  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 820

Rated speed rpm : 754  
rack travel mm : 12.00

Rated speed rpm : 788  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 820

Rated speed rpm : 755  
rack travel mm : 12.00

Rated speed rpm : 789  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 820

---

TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 13.05  
Tolerance mm : + 0.05

---

STARTING FUEL DELIVERY

Rated speed rpm : 100

K10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 320.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 24.0

---

LOW IDLE

Rated speed rpm : 300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 41.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet



Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 8.10

Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 66.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1104

guide sleeve  
travel mm : 5.69

Tolerance mm : + 0.15

Rated speed rpm : 350

guide sleeve  
travel mm : 0.69

Tolerance mm : + 0.20

Rated speed rpm : 1030

guide sleeve  
travel mm : 5.00

Tolerance mm : + 0.25

Rated speed rpm : 540

guide sleeve  
travel mm : 5.00

Tolerance mm : + 0.25

Rated speed rpm : 1360  
guide sleeve  
travel mm : 11.50  
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever  
position degree : 105  
Rated speed rpm : 800

Rack travel in mm : 16.50  
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
Aneroid pressure  
hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 270.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
position degree : 49.0  
tolerance degree : + 4.0

control lever  
position degree : 103.0  
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 13.00  
Rated speed rpm : 1100  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1195  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1270



---

LOW IDLE

control lever  
position degree : 70.0  
tolerance degree : ± 4.0

control lever  
position degree : 16.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 10.00

Testing:

Rated speed rpm : 350  
rack travel mm : 8.10  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 430  
Tolerance 1/min : ± 30

Rated speed rpm : 395

---

TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 14.05  
Tolerance mm : ± 0.05

Rated speed rpm : 600  
rack travel mm : 14.10  
Tolerance mm : ± 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1200  
rack travel mm : 14.05  
Tolerance mm : ± 0.05

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 10.90  
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 560  
rack travel mm : 11.90  
Tolerance mm : ± 0.10

Pressure hPa : 710  
rack travel mm : 13.15  
Tolerance mm : ± 0.05

---

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 300

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 320

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 278.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 183.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 205.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 20.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 24.0

---

LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 8.10

Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 66.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 16.11.93  
Test oil : ISO 4113  
Combination No. : 0 402 746 937

Injection pump  
Pump designation : PES6P120A720RS7268  
EP type number : 0 412 726 884

Governor  
Governor design. : RQ275/1100PA915-2  
Governor no. : 0 421 801 671

Cust. part No. :

Customer-spec. information  
Customer : IVECO-UNIC  
Motor : 8460.41.603

TEST BENCH REQUIREMENTS

Inlet line : 4.2  
Test oil inlet temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 417 413 025  
Inlet press. bar : 1.5  
Tolerance bar : ± 0.1  
Test nozzle holder assembly : 1 688 901 105  
Opening pressure bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 089  
Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Prestroke mm : 5.15  
Tolerance mm : ± 0.05  
Check tolerance mm : ± 0.10  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check tolerance °NW : ± 0.75  
Start of delivery mark  
Tolerance : ± 0.50  
Check tolerance °NW : ± 0.75  
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100  
Rack travel in mm : 12.45  
Tolerance mm : ± 0.05  
Del. quantity cm<sup>3</sup>/1000 strokes : 196.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 6.30  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 23.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever  
position degree : 109  
Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm : + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
Aneroid pressure  
hPa : 900  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 196.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

RATED SPEED  
rack travel mm : 10.90  
Rated speed rpm : 1153  
Tolerance 1/min : + 8

rack travel mm : 4.00  
Rated speed rpm : 1245  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1350

LOW IDLE

control lever  
position degree : 74.0  
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 7.80

Testing:

Rated speed rpm : 275  
rack travel mm : 6.30  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 365  
Tolerance 1/min : + 20

TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 12.45  
Tolerance mm : + 0.05

Rated speed rpm : 550  
rack travel mm : 12.50  
Tolerance mm : + 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 900  
rack travel mm : 11.95  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 8.90  
Tolerance mm :  $\pm$  0.10

MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 240  
rack travel mm : 9.50  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 310  
rack travel mm : 10.85  
Tolerance mm :  $\pm$  0.05

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 900  
Rated speed rpm : 550  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 216.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 112.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

STARTING FUEL DELIVERY

ESS test: With 24 V solenoid activated,  
rack must reach start position in max.  
control lever setting.

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 110.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

LOW IDLE

Rated speed rpm : 275  
Rack travel in mm : 6.30  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 23.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 14.07.93  
Test oil : ISO 4113  
Combination No. : 0 402 746 943  
Injection pump  
Pump designation : PES6P120A720RS7224  
: -1  
EP type number : 0 412 726 889  
Governor  
Governor design. : RQ275/1050PA1021-3  
Governor no. : 0 421 801 677

Cust. part No. :

Customer-spec. information  
Customer : IVECO-UNIC  
Motor : 8460.41.731

TEST BENCH REQUIREMENTS

Inlet line : 4.1  
Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0  
Overflow valve : 1 417 413 025  
Inlet press. bar : 1.5  
Tolerance bar : + 0.1  
Overflow quantity  
min. l/h : 140  
Tolerance l/h : + 20.0  
Test nozzle holde  
assembly : 1 688 901 105  
Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

K18

Test lines : 1 680 750 089  
Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0  
Prestroke mm : 5.15  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10  
Rack travel in mm : 10.50  
Tolerance mm : + 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.50  
Check  
tolerance \*NW : + 0.75  
Start of delivery mark  
Tolerance : + 0.50  
Check  
tolerance \*NW : + 0.75  
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 13.25  
 Tolerance mm : + 0.05

---

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 223.0

---

Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0

---

Speed

---

Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 275

Rack travel in mm : 5.00  
 Tolerance mm : + 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 23.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 6.0  
 Speed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever  
 position degree : 109  
 Rated speed rpm : 600

Rack travel in mm : 20.00  
 Tolerance mm : + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050

Aneroid pressure  
 hPa : 1200  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 223.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0  
 Speed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

RATED SPEED

rack travel mm : 11.70  
 Rated speed rpm : 1103  
 Tolerance 1/min : + 8

rack travel mm : 4.00  
 Rated speed rpm : 1175  
 Tolerance 1/min : + 15

rack travel mm : 0.50  
 Tolerance mm : + 0.50  
 Rated speed rpm : 1350

LOW IDLE

control lever  
 position degree : 74.0  
 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 100  
 CRT mm min. : > 6.50

Testing:

Rated speed rpm : 275  
 rack travel mm : 5.00  
 Tolerance mm : + 0.10

rack travel mm : 2.00  
 Rated speed rpm : 355  
 Tolerance 1/min : + 20

TORQUE CONTROL

Rated speed rpm : 1050  
 rack travel mm : 13.25  
 Tolerance mm : + 0.05

Rated speed rpm : 550  
rack travel mm : 13.30  
Tolerance mm : ± 0.10

Rated speed rpm : 1050  
rack travel mm : 12.75  
Tolerance mm : ± 0.05

Rated speed rpm : 550  
rack travel mm : 12.80  
Tolerance mm : ± 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1200  
rack travel mm : 12.75  
Tolerance mm : ± 0.05

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 7.70  
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 290  
rack travel mm : 8.80  
Tolerance mm : ± 0.20

Pressure hPa : 580  
rack travel mm : 11.35  
Tolerance mm : ± 0.05

---

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 215

Check speed 1/min : > 80  
Check speed 1/min : < 235

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 550

Del. quantity  
cm<sup>3</sup>/1000 strokes : 270.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 7.0

---

rack travel mm : 12.75  
Tolerance mm : ± 0.05

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 127.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 145.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 19.0

---

LOW IDLE

Rated speed rpm : 275  
Rack travel in mm : 5.00  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 23.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 12.01.94  
Test oil : ISO 4113

Combination No. : 0 402 746 963

Injection pump  
Pump designation : PES6P120A720LS7244  
EP type number : 0 412 726 857

Governor  
Governor design. : RQ750PA981-2  
Governor no. : 0 421 801 699

Cust. part No. : 3-7258

Customer-spec. information  
Customer : MAN  
Motor : D2866 LE  
Power KW : 244.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.75  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 19.50  
Tolerance mm : ± 1.50

Firing order : 6- 2- 4- 1- 5-  
: 3

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.35  
Tolerance mm : ± 0.05

Del. quantity cm <sup>3</sup> /1000 strokes	: 276.0
Tolerance cm <sup>3</sup> /1000 strokes	: +- 1.0
Check tolerance cm <sup>3</sup> /1000S.	: +- 4.0
Speed	
Tolerance cm <sup>3</sup> /1000 strokes	: 5.0
Check tolerance cm <sup>3</sup> /1000S.	: 9.0

Rated speed rpm	: 300
Del. quantity cm <sup>3</sup> /1000 strokes	: 23.0
Tolerance cm <sup>3</sup> /1000 strokes	: +- 3.0
Check tolerance cm <sup>3</sup> /1000S.	: +- 6.0
Speed	
Tolerance cm <sup>3</sup> /1000 strokes	: 8.0
Check tolerance cm <sup>3</sup> /1000S.	: 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 750
guide sleeve travel mm	: 2.55
Tolerance mm	: +- 0.25
Rated speed rpm	: 860
guide sleeve travel mm	: 17.35
Tolerance mm	: +- 0.25
Rated speed rpm	: 816
guide sleeve travel mm	: 10.00
Tolerance mm	: +- 0.25
Rated speed rpm	: 870
guide sleeve travel mm	: 11.50
Tolerance mm	: +- 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 700
Aneroid pressure hPa	: -
Del. quantity cm <sup>3</sup> /1000 strokes	: 276.0
Tolerance cm <sup>3</sup> /1000 strokes	: +- 1.0
Check tolerance cm <sup>3</sup> /1000S.	: +- 4.0
Speed	
Tolerance cm <sup>3</sup> /1000 strokes	: 5.0
Check tolerance cm <sup>3</sup> /1000S.	: 9.0

CONTROL LEVER

control lever position degree	: 84.0
tolerance degree	: +- 2.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm	: 750
rack travel mm	: 11.35
Rated speed rpm	: 785
Tolerance 1/min	: +- 4
rack travel mm	: 4.00
rack travel mm	: 0.50
Tolerance mm	: +- 0.50
Rated speed rpm	: 950
Rated speed rpm	: 751
rack travel mm	: 11.35
Rated speed rpm	: 786
Tolerance 1/min	: +- 4
rack travel mm	: 4.00
rack travel mm	: 0.50
Tolerance mm	: +- 0.50
Rated speed rpm	: 950
Rated speed rpm	: 752
rack travel mm	: 11.35
Rated speed rpm	: 787
Tolerance 1/min	: +- 4
rack travel mm	: 4.00

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 950

Rated speed rpm : 753  
rack travel mm : 11.35

Rated speed rpm : 788  
Tolerance 1/min : ± 4  
rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 950

Rated speed rpm : 754  
rack travel mm : 11.35

Rated speed rpm : 789  
Tolerance 1/min : ± 4  
rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 950

Rated speed rpm : 755  
rack travel mm : 11.35

Rated speed rpm : 790  
Tolerance 1/min : ± 4  
rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 950

---

TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 12.35  
Tolerance mm : ± 0.05

---

LOW IDLE

Rated speed rpm : 300

Del. quantity  
cm<sup>3</sup>/1000 strokes : 23.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 04.10.93  
Test oil : ISO 4113  
Combination No. : 0 403 446 326  
Injection pump  
Pump designation : PES6MW100/720RS1188.  
EP type number : 0 413 406 175  
Governor  
Governor design. : RQV300...1350MW138  
Governor no. : 0 420 083 302  
Cust. part No. :

Customer spec. information  
Customer : IVECO-AIFO  
Motor : 8061.SRM 30.10  
Power KW : 221.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 417 413 047  
Inlet press. bar : 1.5  
Test nozzle holder  
assembly : 0 688 901 101  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 014  
Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0  
Prestroke mm : 3.05  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 1350  
Rack travel in mm : 12.85  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 131.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 4.0  
Speed

Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 7.5

---

Rated speed rpm : 300

Rack travel in mm : 7.30  
 Tolerance mm : + 0.10

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 17.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.5

Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 5.5

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1404  
 guide sleeve  
 travel mm : 7.90  
 Tolerance mm : + 0.25

Rated speed rpm : 300  
 guide sleeve  
 travel mm : 1.27  
 Tolerance mm : + 0.25

Rated speed rpm : 965  
 guide sleeve  
 travel mm : 5.12  
 Tolerance mm : + 0.25

Rated speed rpm : 408  
 guide sleeve  
 travel mm : 2.11  
 Tolerance mm : + 0.25

Rated speed rpm : 458  
 guide sleeve  
 travel mm : 2.49  
 Tolerance mm : + 0.25

Rated speed rpm : 580  
 guide sleeve  
 travel mm : 3.10  
 Tolerance mm : + 0.25

Rated speed rpm : 1780  
 guide sleeve  
 travel mm : 11.50  
 Tolerance mm : + 0.50

---

GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1480

Rack travel in mm : 16.50  
 Tolerance mm : + 1.30

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1350  
 Aneroid pressure  
 hPa : 1000

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 131.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0

Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 7.5

---

CONTROL LEVER

control lever  
 position degree : 116.0  
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 9.50  
 Rated speed rpm : 1395  
 Tolerance 1/min : + 5

rack travel mm : 4.00  
 Rated speed rpm : 1545  
 Tolerance 1/min : + 15

rack travel mm : 0.50  
 Tolerance mm : + 0.50  
 Rated speed rpm : 1650

---

LOW IDLE

control lever  
position degree : 84.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 200  
CRT mm min. : > 9.00

Testing:

Rated speed rpm : 300  
rack travel mm : 7.30  
Tolerance mm : ± 0.10

---

TORQUE CONTROL

Rated speed rpm : 1350  
rack travel mm : 12.85  
Tolerance mm : ± 0.05

Rated speed rpm : 800  
rack travel mm : 12.90  
Tolerance mm : ± 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1000  
rack travel mm : 12.85  
Tolerance mm : ± 0.05

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 9.85  
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 300  
rack travel mm : 11.75  
Tolerance mm : ± 0.15

Pressure hPa : 250  
rack travel mm : 10.75  
Tolerance mm : ± 0.05

---

FUEL DELIVERY CHARACTERISTICS

K26

---

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 134.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 69.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 12.95  
Tolerance mm : ± 0.15  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 105.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 8.0

---

LOW IDLE

Rated speed rpm : 300  
Rack travel in mm : 7.30  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 17.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm3/1000s. : 5.5

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 19.03.98  
Test oil : ISO 4113  
  
Combination No. : 0 403 466 131  
  
Injection pump  
Pump designation : PES6MW100/120RS1184.  
EP type number : 0 413 406 171  
  
Governor  
Governor design. : RSV375...1250MW2A334  
: -1  
Governor no. : 0 420 085 207  
  
Cust. part No. : 3281954

Customer-spec. information  
Customer : CUMMINS  
Motor : 6 BTA 5.9  
Power KW : 140.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0  
  
Overflow valve : 1 417 413 047  
  
Inlet press. bar : 1.5  
  
Test nozzle holder  
assembly : 1 688 901 101  
  
Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5  
  
Test lines : 1 680 750 014  
  
Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : + 1.0  
  
Prestroke mm : 3.55  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10  
  
Rack travel in mm : 10.50  
Tolerance mm : + 1.50  
  
Firing order : 1- 5- 3- 6- 2-  
: 4  
  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1250  
  
Rack travel in mm : 10.35  
Tolerance mm : + 0.05  
  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 111.0  
  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
  
Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0  
  
Speed



Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

Rated speed rpm : 375

Rack travel in mm : 7.25  
Tolerance mm : + 0.25

Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.65  
Tolerance mm : + 0.35

governor spring  
pre-tension  
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250  
Aneroid pressure  
hPa : 800

Del. quantity  
cm<sup>3</sup>/1000 strokes : 111.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

CONTROL LEVER

control lever  
position degree : 111.0  
tolerance degree : + 4.0

RATED SPEED  
rack travel mm : 9.30

Rated speed rpm : 1300  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1380

Tolerance 1/min : + 15

rack travel mm : 1.00  
Tolerance mm : + 0.70

Rated speed rpm : 1550

rack travel mm : 4.00  
Rated speed rpm : 1435

Tolerance 1/min : + 15

LOW IDLE

control lever  
position degree : 87.0  
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 375  
rack travel mm : 6.75

Tolerance mm : + 0.25

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 375  
rack travel mm : 7.25

Tolerance mm : + 0.25

TORQUE CONTROL

Rated speed rpm : 1250  
rack travel mm : 10.35

Tolerance mm : + 0.05

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 800  
rack travel mm : 10.35  
Tolerance mm : ± 0.05

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 9.90  
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 470  
rack travel mm : 10.05  
Tolerance mm : ± 0.05

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 90.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 85.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 8.0

---

LOW IDLE

Rated speed rpm : 375

L02

Rack travel in mm : 7.25  
Tolerance mm : ± 0.25  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 27.03.98  
Test oil : ISO 4113  
Combination No. : 0 400 864 103  
Injection pump  
Pump designation : PES4A95D410/3RS2789  
EP type number : 0 410 894 995  
Governor  
Governor design. : RSV325...1250A5C871L  
Governor no. : 0 420 232 626

Cust. part No. : 0423 1876 KY

Customer-spec. information  
Customer : KHD-DMI  
Motor : BF4L 913  
Power kW : 78.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 419 992 198  
Inlet press. bar : 1.5  
Test nozzle holder  
assembly : 0 681 343 009  
Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 014  
Outside diameter : 6.0

L03

x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.00  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 13.50  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 87.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

---

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

Rated speed rpm : 325

Rack travel in mm : 9.60

Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 14.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5

Spread  
Tolerance

cm<sup>3</sup>/1000 strokes : 5.5

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE POSITION

control lever  
position degree : FREE  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : + 0.20

governor spring  
pre-tension  
click setting x : 3.00

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250  
Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 87.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0

Spread  
Tolerance

cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

CONTROL LEVER

control lever  
position degree : 102.0  
tolerance degree : + 4.0

RATED SPEED  
rack travel mm : 12.50  
Rated speed rpm : 1295  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1355  
Tolerance 1/min : + 15

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1565

rack travel mm : 4.00  
Rated speed rpm : 1415  
Tolerance 1/min : + 15

---

LOW IDLE

control lever  
position degree : 69.0  
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 9.10  
Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 325  
rack travel mm : 9.60  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 605  
Tolerance 1/min : + 30

---

TORQUE CONTROL

Rated speed rpm : 1250  
rack travel mm : 13.50  
Tolerance mm : + 0.05

Rated speed rpm : 500  
rack travel mm : 14.20  
Tolerance mm : ± 0.10

Rated speed rpm : 750  
rack travel mm : 13.90  
Tolerance mm : ± 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1400  
rack travel mm : 14.20  
Tolerance mm : ± 0.10

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 13.30  
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 300  
rack travel mm : 13.70  
Tolerance mm : ± 0.05

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 750  
rack travel mm : 13.90  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 85.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500

L05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 68.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm : ± 0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 120.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 7.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 10.0

---

LOW IDLE

Rated speed rpm : 325  
Rack travel in mm : 9.60  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 14.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 27.03.98  
Test oil : ISO 4113  
Combination No. : 0 400 864 106  
Injection pump  
Pump designation : PES4A95D410/3RS2789.  
EP type number : 0 410 894 995  
Governor  
Governor design. : RSV325...1250A5C879L  
Governor no. : 0 420 232 634  
Cust. part No. : 0423 2071 KY

Customer-spec. information  
Customer : KHD-DMI  
Motor : BF4L 913  
Power Kw : 78.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.1  
Test oil inlet  
temp. °C : 40  
Tolerance °C : +- 2.0  
Overflow valve : 1 419 992 198  
Inlet press. bar : 1.5  
Test nozzle holder  
assembly : 0 681 343 009  
Opening pressure  
bar : 173.5  
Tolerance bar : +- 1.5  
Test lines : 1 680 750 014  
Outside diameter : 6.0

L06

x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : +- 1.0  
Prestroke mm : 3.00  
Tolerance mm : +- 0.05  
Check  
tolerance mm : +- 0.10  
Rack travel in mm : 10.50  
Tolerance mm : +- 1.50  
Firing order : 1- 3- 4- 2  
Phasing : 0-90-180-270  
Tolerance : +- 0.50  
Check  
tolerance °NW : +- 0.75

BASIC SETTING

Rated speed rpm : 1250  
Rack travel in mm : 13.50  
Tolerance mm : +- 0.05  
Del. quantity  
cm3/1000 strokes : 87.0  
Tolerance  
cm3/1000 strokes : +- 1.0  
Check tolerance  
cm3/1000S. : +- 3.0  
Speed  
Tolerance  
cm3/1000 strokes : 3.5

---

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

Rated speed rpm : 325

Rack travel in mm : 9.60  
Tolerance mm : +- 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 14.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE POSITION

control lever  
position degree : FREE  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : +- 0.20

governor spring  
pre-tension  
click setting x : 3.00

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250  
Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 87.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 3.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

CONTROL LEVER

control lever  
position degree : 102.0  
tolerance degree : +- 4.0

RATED SPEED  
rack travel mm : 12.50  
Rated speed rpm : 1295  
Tolerance 1/min : +- 5

rack travel mm : 4.00  
Rated speed rpm : 1355  
Tolerance 1/min : +- 15

rack travel mm : 0.85  
Tolerance mm : +- 0.55  
Rated speed rpm : 1565

rack travel mm : 4.00  
Rated speed rpm : 1415  
Tolerance 1/min : +- 15

---

LOW IDLE

control lever  
position degree : 69.0  
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 9.10  
Tolerance mm : +- 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 325  
rack travel mm : 9.60  
Tolerance mm : +- 0.10

rack travel mm : 2.00  
Rated speed rpm : 605  
Tolerance 1/min : +- 30

---

TORQUE CONTROL

Rated speed rpm : 1250  
rack travel mm : 13.50  
Tolerance mm : +- 0.05

Rated speed rpm : 500  
rack travel mm : 14.20  
Tolerance mm : ± 0.10

Rated speed rpm : 750  
rack travel mm : 13.90  
Tolerance mm : ± 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1400  
rack travel mm : 14.20  
Tolerance mm : ± 0.10

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 13.30  
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 300  
rack travel mm : 13.70  
Tolerance mm : ± 0.10

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 750  
rack travel mm : 13.90  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 85.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500

L08

Del. quantity  
cm<sup>3</sup>/1000 strokes : 68.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm : ± 0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 120.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 7.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 10.0

---

LOW IDLE

Rated speed rpm : 325  
Rack travel in mm : 9.60  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 14.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 26.03.98  
Test oil : ISO 4113  
Combination No. : 0 400 864 109  
Injection pump  
Pump designation : PES4A95D410/3RS2789.  
EP type number : 0 410 894 995  
Governor  
Governor design. : RSV325...1250A5C917L  
Governor no. : 0 420 232 639  
Cust. part No. : 0423 2332 KY

Customer-spec. information  
Customer : KHD-DMI  
Motor : F4L912/913  
Power KW : 59.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1  
Test oil inlet temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 419 992 198  
Inlet press. bar : 1.5  
Test nozzle holder assembly : 0 681 343 009  
Opening pressure bar : 173.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 014  
Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Prestroke mm : 3.00  
Tolerance mm : ± 0.05  
Check tolerance mm : ± 0.10  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
Firing order : 1- 3- 4- 2  
Phasing : 0-90-180-270  
Tolerance : ± 0.50  
Check tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1250  
Rack travel in mm : 11.35  
Tolerance mm : ± 0.05  
Del. quantity cm<sup>3</sup>/1000 strokes : 76.0  
Tolerance cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance cm<sup>3</sup>/1000s. : ± 3.0  
Speed

Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 8.0

---

Rated speed rpm : 325

Rack travel in mm : 8.50  
 Tolerance mm : + 0.10

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 11.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.5

Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

---

GUIDE SLEEVE POSITION

control lever  
 position degree : FREE  
 Rated speed rpm : 800

Rack travel in mm : 0.50  
 Tolerance mm : + 0.20

governor spring  
 pre-tension  
 click setting x : 4.25

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250  
 Aneroid pressure  
 hPa : -

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 76.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 3.0

Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
 cm<sup>3</sup>/1000S. : 8.0

---

CONTROL LEVER

control lever  
 position degree : 107.0  
 tolerance degree : + 4.0

RATED SPEED  
 rack travel mm : 10.35  
 Rated speed rpm : 1295  
 Tolerance 1/min : + 5

rack travel mm : 4.00  
 Rated speed rpm : 1355  
 Tolerance 1/min : + 15

rack travel mm : 0.85  
 Tolerance mm : + 0.55  
 Rated speed rpm : 1530

rack travel mm : 4.00  
 Rated speed rpm : 1380  
 Tolerance 1/min : + 15

---

LOW IDLE

control lever  
 position degree : 74.0  
 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 325  
 rack travel mm : 8.00  
 Tolerance mm : + 0.10

Rated speed rpm : 100  
 CRT mm min. : > 19.50

Testing:

Rated speed rpm : 325  
 rack travel mm : 8.50  
 Tolerance mm : + 0.10

rack travel mm : 2.00  
 Rated speed rpm : 510  
 Tolerance 1/min : + 30

---

TORQUE CONTROL

Rated speed rpm : 1250  
rack travel mm : 11.35  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 500

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 17.00  
Tolerance mm :  $\pm$  0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 90.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  7.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  10.0

---

LOW IDLE

Rated speed rpm : 325  
Rack travel in mm : 8.50  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 24.03.98  
Test oil : ISO 4113  
  
Combination No. : 0 402 746 652  
  
Injection pump  
Pump designation : PES6P120A320RS7372  
EP type number : 0 412 726 940  
  
Governor  
Governor design. : RQV250...1500PA1222K  
Governor no. : 0 421 815 466  
  
Cust. part No. : 3897621

Customer-spec. information  
Customer : CDC  
Motor : 6BTA  
Power KW : 265.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 2 417 413 093  
  
Inlet press. bar : 2.0  
Tolerance bar : ± 0.1  
  
Test nozzle holder  
assembly : 1 688 901 103  
  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
  
Test lines : 1 680 750 089  
  
Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 4.00  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
  
Firing order : 1- 5- 3- 6- 2-  
: 4  
  
Phasing : 0-60-120-180-240  
: -300  
  
Start of delivery blocking  
  
°NW after s.o.d. : 12.00  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
  
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1500  
  
Rack travel in mm : 14.45  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 212.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Rated speed rpm : 300

Rack travel in mm : 7.15  
Tolerance mm : ± 0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 28.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0

Spread  
Tolerance

cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1570  
guide sleeve

travel mm : 9.90  
Tolerance mm : ± 0.15

Rated speed rpm : 250  
guide sleeve

travel mm : 1.00  
Tolerance mm : ± 0.20

Rated speed rpm : 986  
guide sleeve

travel mm : 5.80  
Tolerance mm : ± 0.25

Rated speed rpm : 480  
guide sleeve

travel mm : 3.00

Tolerance mm : ± 0.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1500

Aneroid pressure  
hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 212.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread  
Tolerance

cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

CONTROL LEVER

control lever  
position degree : 122.5

tolerance degree : ± 6.0

RATED SPEED

rack travel mm : 13.40  
Rated speed rpm : 1565

Tolerance 1/min : ± 5

rack travel mm : 5.90

Rated speed rpm : 1695

Tolerance 1/min : ± 15

rack travel mm : 0.50

Tolerance mm : ± 0.50

Rated speed rpm : 1780

LOW IDLE

control lever  
position degree : 77.0

tolerance degree : ± 6.0

Control lever difference

Grad : 45.5

tolerance degree : ± 6.0

Setting point w/out bumper spring

Rated speed rpm : 225

CRT mm min. : > 8.00

Testing:

Rated speed rpm : 300  
rack travel mm : 7.15  
Tolerance mm : + 0.20

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 1500  
rack travel mm : 14.45  
Tolerance mm : + 0.05

Rated speed rpm : 1200  
rack travel mm : 14.10  
Tolerance mm : + 0.10

Rated speed rpm : 700  
rack travel mm : 13.20  
Tolerance mm : + 0.20

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 1500  
Pressure hPa : 1200

Rated speed rpm : 1500  
Pressure hPa : -  
rack travel mm : 10.10  
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 1500  
Pressure hPa : 800  
rack travel mm : 13.40  
Tolerance mm : + 0.20

Pressure hPa : 410  
rack travel mm : 11.10  
Tolerance mm : + 0.20

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 240

Check speed 1/min : > 80  
Check speed 1/min : < 250

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 202.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

rack travel mm : 13.20  
Tolerance mm : + 0.20

Aneroid pressure  
hPa : -  
Rated speed rpm : 1500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 108.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 21.00  
Tolerance mm : + 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 167.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 25.0

LOW IDLE

Rated speed rpm : 300  
Rack travel in mm : 7.15  
Tolerance mm : + 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 28.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 5.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 9.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 31.03.98  
Test oil : ISO 4113  
Combination No. : 9 400 030 730FA  
Injection pump  
Pump designation : PES6A95D320/3RS2881.  
EP type number : 9 410 037 215

Governor  
Governor design. :  
Governor no. : 9 420 034 710

Cust. part No. : 3934842

Customer-spec. information

Customer : CDC  
Motor : 6ETA  
Power KW : 129.6

TEST BENCH REQUIREMENTS

Inlet line : 3.2  
Test oil inlet temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 2 417 413 093  
Inlet press. bar : 2.0  
Tolerance bar : ± 0.1  
Test nozzle holder assembly : 1 688 901 101  
Opening pressure bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 014  
Outside diameter : 6.0

L16

x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0  
Prestroke mm : 2.85  
Tolerance mm : ± 0.05  
Check tolerance mm : ± 0.10  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check tolerance °NW : ± 0.75  
Start of delivery blocking  
°NW after s.o.d. : 8.50  
Tolerance : ± 0.50  
Check tolerance °NW : ± 0.75  
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250  
Rack travel in mm : 12.90



Tolerance mm : + 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 108.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0

---

Spreed

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

---

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

---

Rated speed rpm : 475

Rack travel in mm : 5.70  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5

Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE POSITION

control lever  
position degree : - 3

governor spring  
pre-tension  
click setting x : 4.50

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250  
Aneroid pressure  
hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 108.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0

Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

---

CONTROL LEVER

control lever  
position degree : 110.0  
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.90  
Rated speed rpm : 1325  
Tolerance 1/min : + 5  
Check  
speed 1/min : + 10

rack travel mm : 4.00  
Rated speed rpm : 1405  
Tolerance 1/min : + 5  
Check  
speed 1/min : + 10

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1300

rack travel mm : 4.00  
Rated speed rpm : 1410  
Tolerance 1/min : + 15  
Check  
speed 1/min : + 20

---

LOW IDLE

control lever  
position degree : 84.0  
tolerance degree : + 4.0

Control lever difference  
Grad : 26.0  
tolerance degree : + 6.0

Setting point w/out bumper spring

Rated speed rpm : 475

rack travel mm : 5.20  
Tolerance mm : + 0.10  
  
Rated speed rpm : 100  
  
CRT mm min. : > 19.00

Testing:

Rated speed rpm : 475  
rack travel mm : 5.70  
Tolerance mm : + 0.10

---

TORQUE CONTROL

Rated speed rpm : 1250  
rack travel mm : 12.90  
Tolerance mm : + 0.05

Rated speed rpm : 750  
rack travel mm : 13.20  
Tolerance mm : + 0.20

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1200

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 11.30  
Tolerance mm : + 0.10

MEASUREMENT

Rated speed rpm : 500  
  
Pressure hPa : 740  
rack travel mm : 12.55  
Tolerance mm : + 0.20

Pressure hPa : 535  
rack travel mm : 11.75  
Tolerance mm : + 0.20

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 115.5

Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Aneroid pressure

hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 92.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm : + 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 120.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 15.0

---

LOW IDLE

Rated speed rpm : 475  
  
Rack travel in mm : 5.70  
Tolerance mm : + 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 27.03.98  
Test oil : ISO 4113  
Combination No. : 9 400 030 747  
Injection pump  
Pump designation : PES4A95D320/3RS2880.  
EP type number : 9 410 037 214

Governor  
Governor design. : RSV475...1100AOC863R  
Governor no. : 9 420 034 721

Cust. part No. : 3930152

Customer-spec. information

Customer : CDC  
Motor : 4BT3.9  
Power KW : 71.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet temp. °C : 40  
Tolerance °C : + 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0  
Tolerance bar : + 0.1

Test nozzle holder assembly : 1 688 901 101

Opening pressure bar : 208.5  
Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : + 1.0

Prestroke mm : 2.45  
Tolerance mm : + 0.05  
Check tolerance mm : + 0.10

Rack travel in mm : 10.50  
Tolerance mm : + 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Start of delivery blocking

\*NW after s.o.d. : 7.50  
Tolerance : + 0.50  
Check tolerance \*NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.75  
Tolerance mm : + 0.05

Del. quantity cm<sup>3</sup>/1000 strokes : 100.0

Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : ± 3.0

---

Spread

---

Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 6.5

---

Rated speed rpm : 475

Rack travel in mm : 5.60  
 Tolerance mm : ± 0.10

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 21.5

Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 4.5

Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 6.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 8.0

(E) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

---

GUIDE SLEEVE POSITION

control lever  
 position degree : - 3  
 Rated speed rpm : 800

Rack travel in mm : 0.50  
 Tolerance mm : ± 0.20

governor spring  
 pre-tension  
 click setting x : 3.75

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
 Aneroid pressure  
 hPa : 1000  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 100.0

L20

Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 3.0

Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 6.5

---

CONTROL LEVER

control lever  
 position degree : 111.5  
 tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 10.75  
 Rated speed rpm : 1170  
 Tolerance 1/min : ± 5  
 Check  
 speed 1/min : ± 10

rack travel mm : 6.00  
 Rated speed rpm : 1240  
 Tolerance 1/min : ± 5  
 Check  
 speed 1/min : ± 10

rack travel mm : 0.85  
 Tolerance mm : ± 0.55  
 Rated speed rpm : 1375

rack travel mm : 6.00  
 Rated speed rpm : 1240  
 Tolerance 1/min : ± 15  
 Check  
 speed 1/min : ± 20

---

LOW IDLE

control lever  
 position degree : 90.0  
 tolerance degree : ± 4.0

Control lever difference  
 Grad : 21.5  
 tolerance degree : ± 6.0

Setting point w/out bumper spring

Rated speed rpm : 475  
 rack travel mm : 5.10  
 Tolerance mm : ± 0.10

Rated speed rpm : 100  
CRT mm min. : > 19.00

Testing:

Rated speed rpm : 475  
rack travel mm : 5.60  
Tolerance mm : ± 0.10

---

TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 11.75  
Tolerance mm : ± 0.05

Rated speed rpm : 750  
rack travel mm : 12.75  
Tolerance mm : ± 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 750  
Pressure hPa : 1000

Rated speed rpm : 750  
Pressure hPa : -  
rack travel mm : 11.10  
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 750  
Pressure hPa : 600  
rack travel mm : 12.70  
Tolerance mm : ± 0.20

Pressure hPa : 410  
rack travel mm : 11.80  
Tolerance mm : ± 0.20

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 110.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

L21

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

Aneroid pressure

hPa : -  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 86.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm : ± 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 120.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 15.0

---

LOW IDLE

Rated speed rpm : 475  
Rack travel in mm : 5.60  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 21.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 30.03.98  
Test oil : ISO 4113  
Combination No. : 0 401 876 769

Injection pump  
Pump designation : PE6P120A320RS3206-2.  
EP type number : 0 411 826 784

Governor  
Governor design. : RSV250...1300POA374  
: -8  
Governor no. : 0 421 833 320

Cust. part No. : 864068 P05 v. 04/95

---

Customer-spec. information  
Customer : PENTA  
Motor : TAMD71 B  
Power KW : 280.0

## TEST BENCH REQUIREMENTS

Inlet Line : 3.1

Vibration  
damper  
(RoBo diaphragm) : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Tolerance L/h : ± 20.0

Test nozzle holder  
assembly : 1 688 901 019

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

---

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.55  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 7.20  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## Start of delivery mark

Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

---

## BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 10.10  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 216.5

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000s. : + 4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000s. : 9.0

Rated speed rpm : 250

Rack travel in mm : 5.20  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.5

Check tolerance  
cm<sup>3</sup>/1000s. : + 5.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000s. : 7.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : + 0.20

governor spring  
pre-tension  
click setting x : 6.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000

Aneroid pressure  
hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 216.5

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000s. : + 4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000s. : 9.0

CONTROL LEVER

control lever  
position degree : 64.0  
tolerance degree : + 4.0

control lever  
position degree : 114.0  
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 9.10  
Rated speed rpm : 1340

Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1430

Tolerance 1/min : + 15

rack travel mm : 0.85  
Tolerance mm : + 0.55

Rated speed rpm : 1530

rack travel mm : 4.00  
Rated speed rpm : 1440

Tolerance 1/min : + 15

LOW IDLE

control lever  
position degree : 80.0  
tolerance degree : + 4.0

control lever  
position degree : 30.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 250  
rack travel mm : 4.70  
Tolerance mm : ± 0.10

Testing:

Rated speed rpm : 250  
rack travel mm : 5.20  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 440  
Tolerance 1/min : ± 30

---

TORQUE CONTROL

Rated speed rpm : 1000  
rack travel mm : 10.10  
Tolerance mm : ± 0.05

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1200  
rack travel mm : 10.10  
Tolerance mm : ± 0.05

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 7.20  
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 780  
rack travel mm : 2.60  
Tolerance mm : ± 0.20

Pressure hPa : 350  
rack travel mm : 0.25  
Tolerance mm : ± 0.05

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 136.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 4.0

---

LOW IDLE

Rated speed rpm : 250  
Rack travel in mm : 5.20  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.5  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 7.0

---

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 27.03.98  
Test oil : ISO 4113  
  
Combination No. : 0 402 646 675  
  
Injection pump  
Pump designation : PE6P120A32ORS7299  
EP type number : 0 412 626 885  
  
Governor  
Governor design. : RQV275...1000PA1337K  
Governor no. : 0 421 815 554

Cust. part No. : 1322504

Customer-spec. information

Customer : DAF  
Motor : WS 268 M  
Power KW : 268.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity min. l/h : 140  
Tolerance l/h : ± 20.0

Test nozzle holder assembly : 1 688 901 105

Opening pressure bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.85  
Tolerance mm : ± 0.05  
Check tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50  
Check tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 980

Rack travel in mm : 13.55  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 250.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 5.10  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 17.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1047  
guide sleeve  
travel mm : 7.35  
Tolerance mm : ± 0.15

Rated speed rpm : 275  
guide sleeve  
travel mm : 2.04  
Tolerance mm : ± 0.20

Rated speed rpm : 820  
guide sleeve  
travel mm : 5.14  
Tolerance mm : ± 0.25

Rated speed rpm : 480

guide sleeve  
travel mm : 3.34  
Tolerance mm : ± 0.25

Rated speed rpm : 1282  
guide sleeve  
travel mm : 12.00  
Tolerance mm : ± 0.25

Rated speed rpm : 1370  
guide sleeve  
travel mm : 13.50  
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1248

Rack travel in mm : 12.80  
Tolerance mm : ± 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 980  
Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 250.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
position degree : 110.0  
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 12.55  
Rated speed rpm : 1042  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1150  
Tolerance 1/min : ± 15

rack travel mm : 0.70  
Tolerance mm : + 0.70  
Rated speed rpm : 1250

---

LOW IDLE

control lever  
position degree : 75.0  
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 175  
CRT mm min. : > 7.50

Testing:

Rated speed rpm : 275  
rack travel mm : 5.10  
Tolerance mm : + 0.10

Rated speed rpm : 350

---

TORQUE CONTROL

Rated speed rpm : 980  
rack travel mm : 13.55  
Tolerance mm : + 0.05

Rated speed rpm : 750  
rack travel mm : 13.05  
Tolerance mm : + 0.10

Rated speed rpm : 600  
rack travel mm : 12.35  
Tolerance mm : + 0.10

Rated speed rpm : 500  
rack travel mm : 11.90  
Tolerance mm : + 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 980  
Pressure hPa : 1500  
rack travel mm : 13.55  
Tolerance mm : + 0.05

Rated speed rpm : 980  
Pressure hPa : -

L27

rack travel mm : 8.20  
Tolerance mm : + 0.10

MEASUREMENT

Rated speed rpm : 980

Pressure hPa : 820  
rack travel mm : 12.25  
Tolerance mm : + 0.05

Pressure hPa : 400  
rack travel mm : 9.40  
Tolerance mm : + 0.15

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 263.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

rack travel mm : 12.35  
Tolerance mm : + 0.10

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 144.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : 5.10

Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 17.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 27.03.98  
Test oil : ISO 4113

Combination No. : 0 402 646 682

Injection pump  
Pump designation : PE6P12DA32ORS7438  
EP type number : 0 412 626 965

Governor  
Governor design. : RQV275...1150PA1386K  
Governor no. : 0 421 815 563

Cust. part No. : 1349449

Customer-spec. information  
Customer : DAF  
Motor : PF 235 M (flach)  
Power KW : 235.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 150  
Tolerance l/h : ± 20.0

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

MO1

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.85  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 13.50  
Tolerance mm : ± 0.05

<hr/>	
Del. quantity	
cm <sup>3</sup> /1000 strokes	: 259.0
<hr/>	
Tolerance	
cm <sup>3</sup> /1000 strokes	: ± 1.0
<hr/>	
Check tolerance	
cm <sup>3</sup> /1000s.	: ± 4.0
<hr/>	
Spread	
<hr/>	
Tolerance	
cm <sup>3</sup> /1000 strokes	: 5.0
<hr/>	
Check tolerance	
cm <sup>3</sup> /1000s.	: 9.0
<hr/>	

Rated speed rpm	: 275
Rack travel in mm	: 5.00
Tolerance mm	: ± 0.10
Del. quantity	
cm <sup>3</sup> /1000 strokes	: 16.0
Tolerance	
cm <sup>3</sup> /1000 strokes	: ± 3.0
Check tolerance	
cm <sup>3</sup> /1000s.	: ± 6.0
Spread	
Tolerance	
cm <sup>3</sup> /1000 strokes	: 8.0
Check tolerance	
cm <sup>3</sup> /1000s.	: 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 1174
guide sleeve	
travel mm	: 7.43
Tolerance mm	: ± 0.15
<hr/>	
Rated speed rpm	: 275
guide sleeve	
travel mm	: 1.71
Tolerance mm	: ± 0.20
<hr/>	
Rated speed rpm	: 940
guide sleeve	
travel mm	: 5.44
Tolerance mm	: ± 0.25
<hr/>	
Rated speed rpm	: 520

guide sleeve	
travel mm	: 3.40
Tolerance mm	: ± 0.25
<hr/>	
Rated speed rpm	: 1427
guide sleeve	
travel mm	: 12.00
Tolerance mm	: ± 0.25
<hr/>	
Rated speed rpm	: 1520
guide sleeve	
travel mm	: 13.50
Tolerance mm	: ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm	: 1401
Rack travel in mm	: 12.20
Tolerance mm	: ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 850
Aneroid pressure	
hPa	: 1500
Del. quantity	
cm <sup>3</sup> /1000 strokes	: 259.0
Tolerance	
cm <sup>3</sup> /1000 strokes	: ± 1.0
Check tolerance	
cm <sup>3</sup> /1000s.	: ± 4.0
Spread	
Tolerance	
cm <sup>3</sup> /1000 strokes	: 5.0
Check tolerance	
cm <sup>3</sup> /1000s.	: 9.0

CONTROL LEVER

control lever	
position degree	: 110.0
tolerance degree	: ± 4.0
<hr/>	
RATED SPEED	
rack travel mm	: 12.20
Rated speed rpm	: 1185
Tolerance 1/min	: ± 5
Check	
speed 1/min	: ± 10
<hr/>	
rack travel mm	: 4.00
Rated speed rpm	: 1295
Tolerance 1/min	: ± 15
Check	
speed 1/min	: ± 20

rack travel mm : 0.70  
Tolerance mm : ± 0.70  
Rated speed rpm : 1450

---

LOW IDLE

control lever  
position degree : 73.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 175

CRT mm min. : > 7.60

Testing:

Rated speed rpm : 275  
rack travel mm : 5.00  
Tolerance mm : ± 0.10

Rated speed rpm : 395

---

TORQUE CONTROL

Rated speed rpm : 850  
rack travel mm : 13.50  
Tolerance mm : ± 0.05

Rated speed rpm : 1130  
rack travel mm : 13.20  
Tolerance mm : ± 0.10

Rated speed rpm : 1000  
rack travel mm : 13.35  
Tolerance mm : ± 0.10

Rated speed rpm : 800  
rack travel mm : 13.45  
Tolerance mm : ± 0.10

Rated speed rpm : 650  
rack travel mm : 12.70  
Tolerance mm : ± 0.10

Rated speed rpm : 500  
rack travel mm : 11.90  
Tolerance mm : ± 0.10

Rated speed rpm : 1150  
rack travel mm : 13.20  
Tolerance mm : ± 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 875  
Pressure hPa : 1500  
rack travel mm : 13.50  
Tolerance mm : ± 0.10

Rated speed rpm : 875  
Pressure hPa : -  
rack travel mm : 9.15  
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 875  
Pressure hPa : 450  
rack travel mm : 12.10  
Tolerance mm : ± 0.05

Pressure hPa : 150  
rack travel mm : 9.80  
Tolerance mm : ± 0.10

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 1130  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 232.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

rack travel mm : 13.35  
Tolerance mm : ± 0.10

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 170.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

LOW IDLE

Rated speed rpm : 275  
Rack travel in mm : 5.00  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

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End of test specification sheet